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GRAPHITE

VOL. XIII.

JANUARY, 1911.

No. 1.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

SLOWNESS OF THE UNITED STATES

Mr. John M. Turner, the United States commercial agent, reports that the United States has a very small trade in Brazil in the way of selling goods. The United States buys enough of Brazil, but does not sell that country half enough, and Mr. Turner made it his business to find out why. He found that all the large foreign houses were either English, German or French. All the shoes, silks, cotton goods and fancy articles in the store windows were of English or German make, about equally divided, except in the case of shoes, and they all appeared to be French. In looking about for American investments, he could find none. All the banks were English, German or French.

In the *Journal of Commerce*, the best commercial paper published in Rio, there is always more than a page of cables, a column from England, another from Germany, the balance of the page divided among other European countries. In one corner he found the United States news made up of three short items, one a lynching case, one a railroad accident, the other telling that a certain actress had secured her divorce.

Mr. Turner suggests that it might be a good idea to revise the cable news that goes out from the United States to South America, it should consist of something besides riots, lynching cases, divorce proceedings, failures and railroad accidents. The European cables were interesting reading of a character quite different from the news received from the United States.

The Dixon representative reports similar conditions in Buenos Aires. Not an American Bank is to be found there and a very strong prejudice against American goods, except those that are made by American manufacturers who understand the wants and needs of South America and who are careful in putting up their goods and who are wise enough to put their own name on their goods and make a reputation for them, which they are equally careful to maintain.

IN SEPTEMBER, 1910, a permanent organization known as The American Manufacturers' Association was formed in the City of New York. It is officered and directed by aggressive and successful business men of long practical experience in export management of American manufactures.

CREATIVE SALESMANSHIP

E. St. Elmo Lewis, advertising manager of the Burroughs Adding Machine Company, has published one of his addresses under the above title. The address contains a number of important thoughts and is well worth the reader's time.

The talk is devoted chiefly to a problem of the store salesman and saleswoman and their proper education. The desirability, not to say necessity, for such education by the employer is illustrated by the following graphic picture drawn by Mr. Lewis:

"When you reduce it to the last analysis, gentlemen, 'Tilly' Thompson, whom you pay the munificent salary of \$5.00 a week, is you. She stands for you, and as far as I am concerned, she is you. Now, how do you like your picture? How do you like the gum-chewing, fluffy-haired, beribboned, flighty, pert slang-slinger, through whom you tell me the quality of your goods, the fairness of your prices and reflect the business rectitude of the proprietor of your store? 'Tilly' may be as far beyond reproach as Caesar's wife, but that has but little to do with her efficiency as a saleswoman in your store."

It is quite probable that very few of us have thought of the matter in this light and yet this is obviously true. The unknown is always and necessarily judged by the known. Mr. Lewis suggests that "you think it over."

HOW TO REMOVE OLD PUTTY

Remove the window sash and lay it flat on a table with the putty side up. Take a common spring-bottom oiler filled with gasoline and squirt a small quantity of gasoline on the putty all around the sash. Apply a match and the heat of the burning gasoline will soften the old, hard putty so that it can be removed with a putty knife without cutting or defacing the sash. If the putty is very hard, a second application of the gasoline may be necessary.

—Penberthy Engineer and Fireman.

Sometime ago it was stated that cedar had become so scarce that a German chemist had discovered a process of treating potatoes whereby a substitute was obtained for the cedar casings of lead pencils. "The chemist's discovery," says *The London Globe*, "is not likely to turn out as profitable as was expected, for the news is to hand of the discovery in German East Africa of a magnificent forest of cedar trees. Already several consignments of cedar logs have reached Hamburg, and it is said that the future of the cedar pencil industry is assured."

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

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Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
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NEW YORK SALESROOM, 68 Reade Street.
PHILADELPHIA SALESROOM, 1020 Arch Street.
SAN FRANCISCO SALESROOM, 145 Second Street.
CHICAGO OFFICE, 1324 Monadnock Block.
BOSTON OFFICE, 648 John Hancock Building.
PITTSBURG OFFICE, Wabash Terminal Building.
ST. LOUIS OFFICE, 501 Victoria Building.
WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
BALTIMORE OFFICE, 1005 Union Trust Building.
BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS,
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

THE ATTITUDE CRITICAL

There are some people who insist upon criticism "more than there is any necessary for." Whatever is said they take up with an idea of perverting or transposing in some way, their motive being not to understand it as it is more or less obviously meant, but to see how it may be cleverly misconstrued or misinterpreted.

Some cheap humor of this kind has been developed along the lines of foolish questions which some of the newspapers have featured. For instance, a man is seen going down the street with some fishing paraphernalia. Neighbor Jones meets him and by way of greeting says, "Going fishing?" Jones comes back cleverly(?), "No, getting ready to paint the house." In nine cases out of ten the original remark was

made more by way of salutation than anything else or just to express affability, as one might say, "Good Morning." In some cases it may be intended as an abbreviation of a fuller statement which completely rendered would read: "I see you are going fishing."

This attitude critical can be very readily carried to excess, and if criticism is made wide enough and directed from different view points, it can be made to affect almost any form of statement. For instance, it is customary when a building is painted, to put up a sign "Paint." This warns those who come near the building to guard against soiling their clothes. The attitude critical applied to this sign is as follows: "Paint? why anybody can see that the structure is painted; the sign is not complete, it should say 'Wet Paint.'" The sign "Wet Paint" is very frequently used, but the attitude critical can still attack this sign, which criticism would run about as follows: "Wet Paint? why anybody knows they would not put up a sign if the paint was dry; the term wet is entirely unnecessary."

Look out for the attitude critical, it is a habit easy to form and hard to shake. It also can become very disagreeable to those with whom you come in contact. Of course, you have not got it and neither have we, but it is well to keep it in mind just the same.

AFTER MANY DAYS

The late John A. Walker, vice president of the Joseph Dixon Crucible Company, was a very prolific and interesting writer on current topics. Several years ago he wrote an article for GRAPHITE which was printed therein, and now after these many years, some friend of ours showed us a bill from a manufacturer with Mr. Walker's article printed on the back of the bill, it evidently being the practise of that manufacturer to have all of his bills bear this article of Mr. Walker. The article is as follows:

WHY DID HE DO HIMSELF ALL THIS DAMAGE?

We sold a customer a small bill, writes Mr. John A. Walker, vice president of the Joseph Dixon Crucible Company, and when due it was not promptly paid.

We reminded him by statement and no answer.

We wrote a letter and still no answer.

We, after giving him notice, sent a draft to his local bank which was returned, marked "Refused." We called his attention to this by letter and not a word.

We then wrote a friendly letter explaining a forced collection was the only alternative and would be used in case he did not pay by a given date.

The given date passed and no response. It then went to his local attorney and immediately thereafter he sent his check.

Now, why did he do it this way?

His method is understandable if he had made up his mind never to pay; but intending some day to pay, as he finally did, why did he go—

First, through the process of disgrace with us?

Second, of disgrace with his local bank?

Third, of disgrace with his local attorney?

This we don't understand.

DIXON's graphite publications sent free upon request.

LUBRICANT CHARACTERISTICS

PART II

FLUIDS

A disadvantage of a fluid lubricant is that the same does not have sufficient body for classes of work requiring a protecting film without approaching that class of lubricants which is of necessity of a very viscous nature. Another very serious disadvantage which oil has, is that when used in a transmission gear case where there is a continual clipping of the gear teeth, and as the oil is constantly agitated, some of these metal particles are carried to the bearings and serious cutting results.

CYLINDER LUBRICATION

For a gas engine cylinder lubricant it must be one which will stand a high temperature. It has been roughly estimated that the temperature of the gas engine during some parts of the explosion stroke is over 2000 degrees, therefore it is necessary that at this temperature the lubricant be one which will not burn at all, or else leave the least carbon deposit behind. As it is impossible to get the first condition, we have to find an oil which will best meet the latter condition.

Where the lubrication entirely depends upon the splash system, the crank end of the piston is well lubricated, while the head end receives scarcely any lubricant at all, with the result that the piston rings become fouled and bound with a hard carbon deposit.

Other disadvantages of oils are that it is necessary to have a special kind of oil for the work required; and when changes of temperatures are encountered, this again necessitates a change and a loss in efficiency. Again, oils will not stay where you want them.

SEMI-FLUID LUBRICANTS

Under this class are grouped greases of different melting points, from the soft greases up to very hard ones, containing animal matter which will give them a high melting point.

The advantages of grease are that when used on a bearing, the grease is used as needed and after doing its work in the bearing, forms a collar on the shaft which prevents dirt and other foreign matter from working into the bearing. When used in a gear box, the part which is next to the gear teeth is the only part which is in constant agitation, while the metal particles will have a tendency to settle to the bottom of the case. Grease is more economical than oil, is handier and will stay in place better, will not work out of the gear box and make a nasty and dangerous mess.

NOT SUITABLE FOR CYLINDER

However, greases should not, as a rule, be used as a cylinder lubricant, because they are usually rich in hydrocarbons and when burned will leave a large quantity of carbon deposit behind.

UNSUITABLE OILS

Before closing this discussion on liquid and semi-liquid lubricants, it might be well to call attention to the difference between vegetable and animal oils. Where animal oils or greases are used, there is danger of acids being formed which will attack the metal surfaces. This is particularly noticed in animal oil when used as a gas engine cylinder lubricant,

because the formation of these acids is more pronounced where there is much heat. Vegetable oils as a rule are not adapted to the severe conditions that mineral oils are, and when pure are expensive.

The following very simple test will determine whether the oil contains vegetable or animal oils. If chlorine is added animal oils are indicated by a brownish appearance of the liquid, while vegetable oils will turn white.

SOLID LUBRICANTS

Under the third class of lubricants, the best one is flake graphite. It possesses all the necessary requirements as indicated above and is, in fact, a perfect lubricant. It has been found that when used with oil it will in time attach itself to all the minute irregularities which are known to exist in metal surfaces, forming a thin, tough, veneer-like coating of marvelous smoothness.

It has been found by actual test by such men as the late Professor Robert Thurston, Professor Kingsbury and others, that the co-efficient of friction is reduced very materially when from five to ten per cent of flake graphite is used with the oils, and that a heavier load may be carried per square inch of bearing surface. These deductions are borne out by the experience of many practical men and today, when bearings give signs of distress (indicated by heating or groaning in the advance state), flake graphite always comes to the rescue.

ADVANTAGES OF GRAPHITE

Possessing great natural lubricating qualities in itself, and being unaffected by wide changes of temperature, it makes an ideal lubricant for gas engine cylinders, and when used with cylinder oil it has been found that the amount of oil consumed is materially reduced, compression is increased several pounds, more heat is available for actual work in the engine, in that the temperature of the exhaust gases is reduced and smoother running is generally noted without changing the test conditions at all.

BOTH UP TO STANDARD

Sometime ago the Dixon Company had an order for graphite grease from a valued customer and later on the following letter:

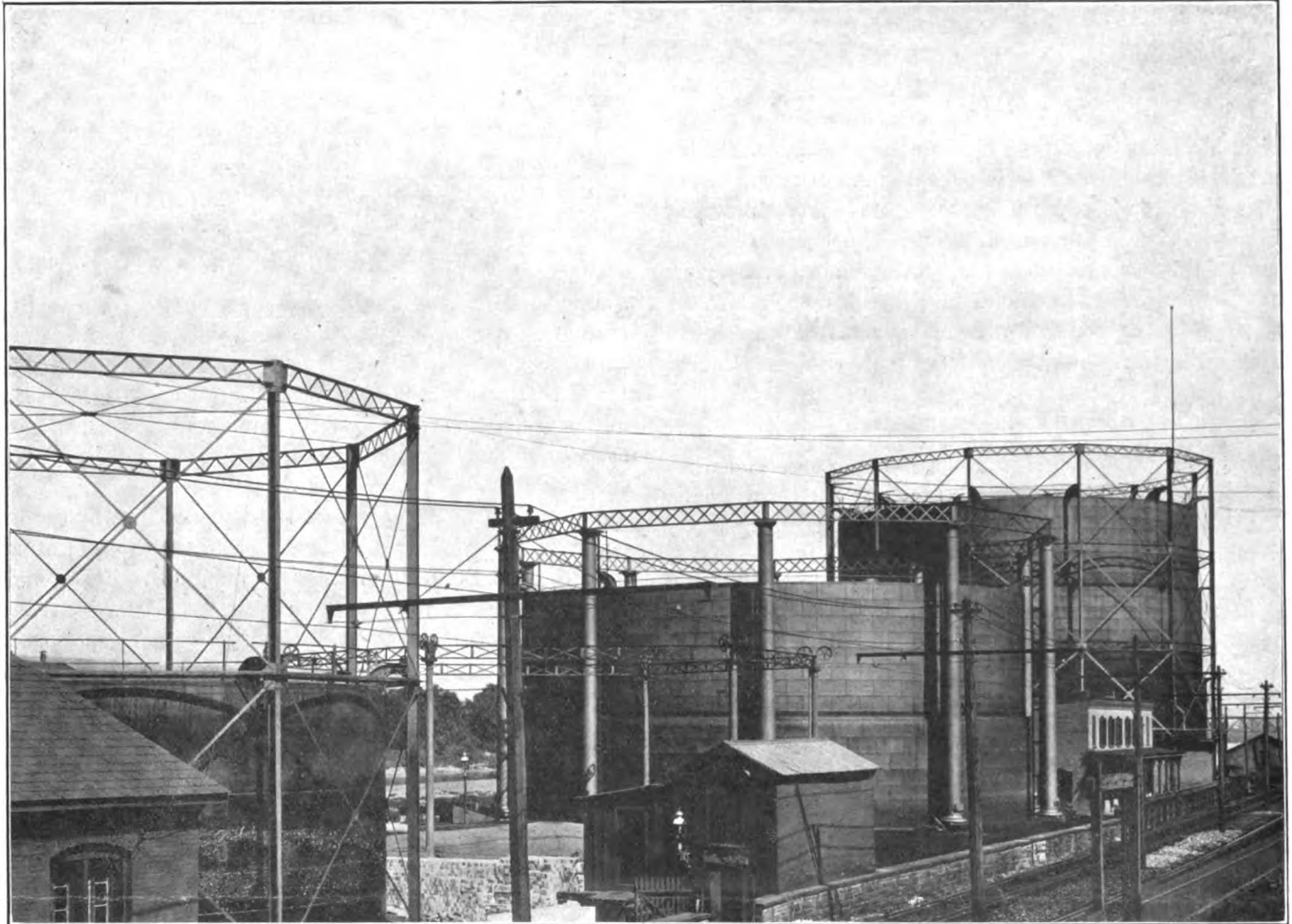
"We are returning to you today one barrel of graphite grease, as the grease is not up to your usual standard and we are unable to use it."

We replied at once that we were at a loss to understand why the grease was not up to our usual standard and we asked that they kindly send us a sample if the barrel had not already been shipped us.

We then received the following:

"We request that you disregard our previous letter about the barrel of graphite grease, as the barrel in question was bought from another company and we are today rectifying our mistake and we hope we have not put you to any trouble."

It therefore turned out that the barrel of graphite grease we sent them was up to the usual high standard of the Dixon Company, in which we have always taken pride and which is higher than our competitors seem to be able to offer, and also that our customer, with the manliness that characterizes the great majority of business men at the present day, was quick to acknowledge his error.



FIVE YEAR PAINTING PERIODS

The above illustration shows a view of the Wilkes-Barre Gas and Electric Company's plant. Dixon's Silica-Graphite Paint is exclusively used for protecting this concern's gas holders, and in this way they are able to avoid repainting, excepting at five year intervals. If you believe it is possible for you to secure longer service for paint on some unprotected steel work, we would be glad to have you take the matter up with us.

WHAT A RAILROAD MAN WRITES

MINOT, N. D., Nov. 8, 1910.

*Joseph Dixon Crucible Company,
Jersey City, N. J.*

DEAR SIRs:—Having converted a number of our freight engines to superheaters, thereby increasing their cylinder power without increasing size of rod brasses, rods or pins, we are naturally having more or less trouble with hot main pins. This is partly owing to the fact that we have had a heavy fruit and stock business which necessitates fast time.

I have been using your flake graphite and the result is beyond belief to those running the same class of engine and who have used most everything recommended except your graphite. I believe, however, in order to get the full benefit of your graphite, one must have some experience in using it. I get best results by using it very sparingly. A few days ago an engineer who runs the fast mail between here and Williston,

a distance of 121 miles without a stop, said his main pins were running hot. We found his cups nearly empty. I gave him enough for both back ends and helped him mix it with the grease. He afterwards told me that he did not use one-third of the grease on his return trip, but of course several applications would be necessary in order to get the graphite worked into the bearings and realize the full benefit. I wish you would send samples to a few who will appreciate it and its use, whose names I will give you.

Yours truly,

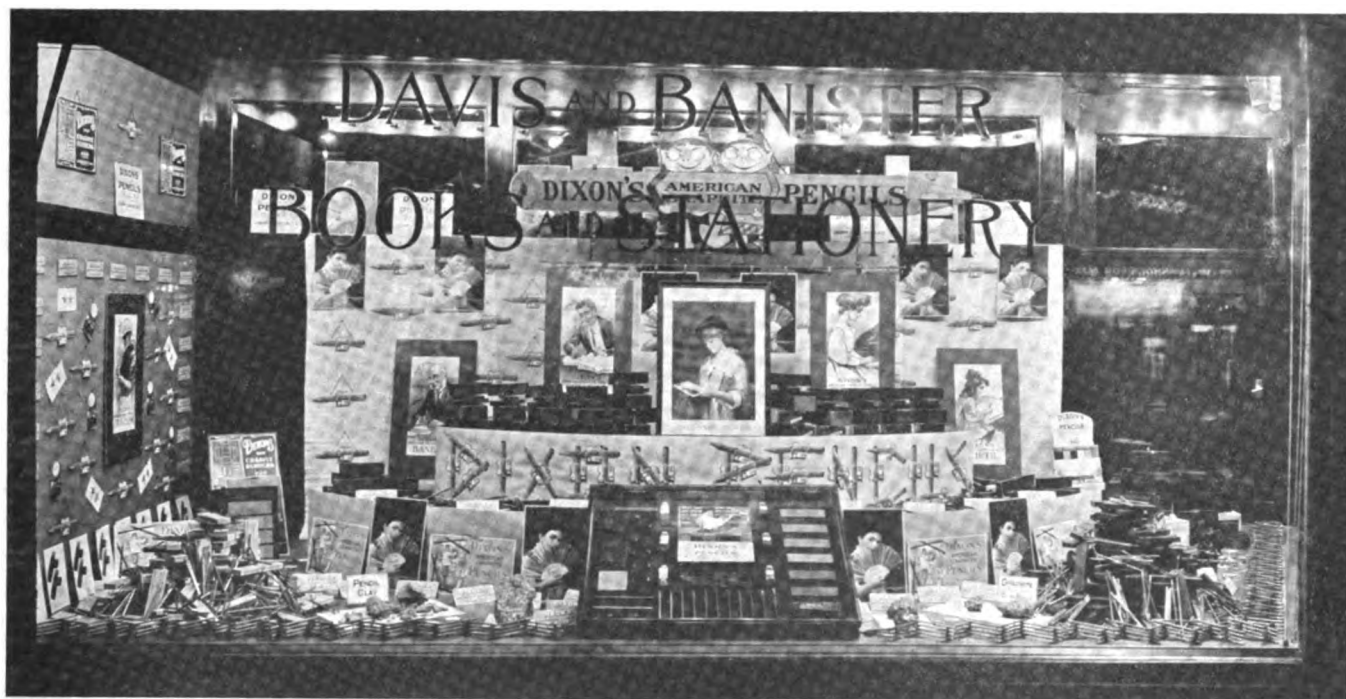
(Signed) J. F. BROTHERS.

PACKING VALVES

Question.—What is the reason I cannot keep packing around my governor stem? I have tried a number of different kinds and cannot make any of them work right. They get dry quickly. Can it be due to having too much lead on the head end of the valve? The governor valve keeps jumping all day long and the engine does not run steady.

Answer.—We are inclined to think your governor stem is either kinked or has a rough place in it. It hardly seems possible that the high pressure of steam would burn out packing if it is braided properly and given plenty of oil and graphite. It will aid the steadiness of the running of your engine and make easier work for your governor if the valve is set correctly.—*The American Thresherman.*

DIXON's graphite publications sent free upon request.



A DIXON PENCIL DISPLAY BY A PROGRESSIVE NEW ENGLAND FIRM

The accompanying illustration gives an idea of the unique and attractive window display, which has recently attracted considerable attention in the large show window of Davis & Banister's attractive store, Worcester, Mass.

In the foreground is an interesting illustration of the evolution of a lead pencil, showing the material used and pencils in the various stages of construction. Also graphite from the Dixon mines and fine specimens of cedar from the Dixon mills in Florida. There is a generous display of Dixon's Anglo-Saxon Pencils, which are growing extremely popular in New England. In the background is a Dixon pencil sign made of the Dixon Brownies and above this a large Dixon Brownie sign. A touch of color is given by a variety of artistic Dixon posters.

ADVERTISING

A Form of Insurance

A large manufacturing industry of the United States, has decided a campaign of advertising and has carefully planned to cover a series of the best publications for the next three years. This will involve a large expenditure of money.

The company has not been known among the larger advertisers, in fact it may be truthfully said that it has not been known at all among advertisers.

The company mentioned has decided on its present plan after most careful consideration and study.

In the words of its representatives, it is to be considered a sort of insurance on the life of its business, probably on the idea of indowment insurance, wherein it will be able to realize full benefit during life,—and the Irishman's idea that life insurance means a continuance of life.

They are now convinced that advertising is needed not only to hold old trade but to secure new trade. They are led to believe that the public, that is the users of an article, expect to have things called to their attention through advertise-

ments and that dealers do not like to spend the time talking up certain goods that are not advertised.

Advertising on the part of a manufacturer indicates that that manufacturer has confidence in his goods and users of such goods, therefore will have greater confidence in goods that are persistently advertised than in goods that are not advertised.

THE CRUCIBLE

By O. HENRY

Hard ye may be in the tumult,
Red to your battle hilts,
Blow give for blow in the foray,
Cunningly ride in the tilts;
But when the roaring is ended,
Tenderly, unbeguiled,
Turn to a woman a woman's
Heart, and a child's to a child.

Test of the man, if his worth be
In accord with the ultimate plan,
That he be not, to his marring,
Always and utterly man;
That he bring out of the tumult,
Fitter and undefiled,
To women the heart of a woman,
To children the heart of a child.

Good when the bugles are ranting
It is to be iron and fire;
Good to be oak in the foray,
Ice to a guilty desire.
But when the battle is over
(Marvel and wonder the while)
Give to a woman a woman's
Heart, and a child's to a child.

—Everybody's.

FAIR PLAY AND FULL CONSIDERATION

What the Railway Business Association is Doing in an Independent Way for Business Men and Railways

There is in the United States an organized co-operative body whose object is to prevent the railways from giving offence to the public and to restrain the public from urging hasty measures in railway legislation.

Also with the object of letting it be known that the American railways are safe investments because the railway men, the business men, and the regulatory agencies of the State and Nation have determined to make them safe.

The work of the association, known as the Railway Business Association, during the two years of its existence has consisted in the following efforts:

1. To study public complaints and assist in devising methods for meeting them.
2. To appeal to business men for fair play and full consideration on specific railway matters affecting business.
3. To distribute literature designed to promote conciliation.

In order to carry out this work, the Railway Business Association has been careful to maintain an entire independence of the railways. In any controversies which must be adjudicated by the Federal or State Commissions, it is left for the railways to make their own case.

The function of the Railway Business Association is to create an amicable atmosphere in which the railways and their friends may make mutual concessions and avoid litigation.

The Railway Business Association believes that nothing will tend more to make business conditions more stable than for railway questions to be discussed amicably and dispassionately.

The membership of the Railway Business Association is at the present writing made up by representatives of about 275 of the largest and best known business and manufacturing concerns in the United States. During the past year about seventy new members have joined the association and it is the wish of the association to have a much larger membership and to have not only representatives from the larger concerns, but memberships from the smaller business houses and manufacturers.

The Dixon Company are members and have been since the beginning of the organization, and strongly recommend membership in the Railway Business Association. Those interested may address Mr. Frank W. Noxon, Secretary, No. 2 Rector Street, New York City.

KEROSENE IN ENGINES OF AUTOMOBILES

It has been the practise of many owners of automobiles to put kerosene in their engines with the idea that the kerosene would remove the carbon deposits. Some owners have claimed that if the kerosene is used immediately after a long trip, and while the carbon is in a soft condition and the engine is hot, that the results are very satisfactory, but that if the engine is allowed to cool and the carbon to become hard, the kerosene will not be entirely satisfactory.

A writer in the *Automobile Dealer and Repairer* gives his experience as follows, and his experience may be of interest to others.

It was the practise among owners of his acquaintance to flush the engine with kerosene, remove the hand plates in the crank case and change the oil. By this practise it became necessary to use the remedy about once a week or so. It was found, however, that after the use of kerosene the piston would leak and the lubricating oil from the crank case would work by the rings into the combustion chamber. With the leaky pistons was the attending loss of power, which required a change of mixture and a change to heavier oil.

Upon close observation it was found that the kerosene merely detached the carbon crust from the walls, the loose crust in the combustion chamber was hardened and made more incandescent, and the sweep walls were made bare of lubricant and the efficiency of the motor destroyed.

The remedy was to discontinue the use of kerosene, mix Dixon's Motor Graphite with the oil in the crank case to build up a glaze on the cylinder walls and put a pint of oil to each five gallons of gasoline in the tank for lubricating the internal parts of the motor. By this practise, cars could be run for several months without taking out the spark plug.

THINGS THAT DISAPPEAR

What becomes of the pins is a question that has never been answered and there are other questions just as important.

What becomes of the vast volume of copper pennies that are turned out every year by the Government? They are never called in and redeemed like some other kinds of currency and coins, but nevertheless one hundred million cents coined each year disappear as fast as they are stamped and put into circulation. If the one hundred million pennies were laid edge to edge, they would extend for one thousand miles or more.

Again we may well ask what becomes of the lead pencils made in the United States, of which we estimate there are one hundred and fifty million made each year, which if laid end to end would extend over sixteen thousand miles.

I KNEAD THEM VERY MUCH

The following is a copy of a letter received by our St. Louis office:

"Please send me your sample bunch of pencils. I knead them very much. i will introduce them in my school and all the help i can i will do so. i will put them in my school at once hoping to receive them at once. I remain as ever your friend.

"And oblige thinking you in advance."

We omit the name for the very good reason that no name was signed to the letter, much to our regret.

REORDERING DIXON'S CRUCIBLES

You may have thought it strange, me not ordering for so long a time. I bought some of Dixon's Crucibles here. One party left the city and I bought what he had. The other party had large sizes he could not use, and I bought them. There is always a sale for Dixon Crucibles. I want no other.

JOHN R. EICH, York, Pa.



A CARLOAD OF DIXON'S CRUCIBLES

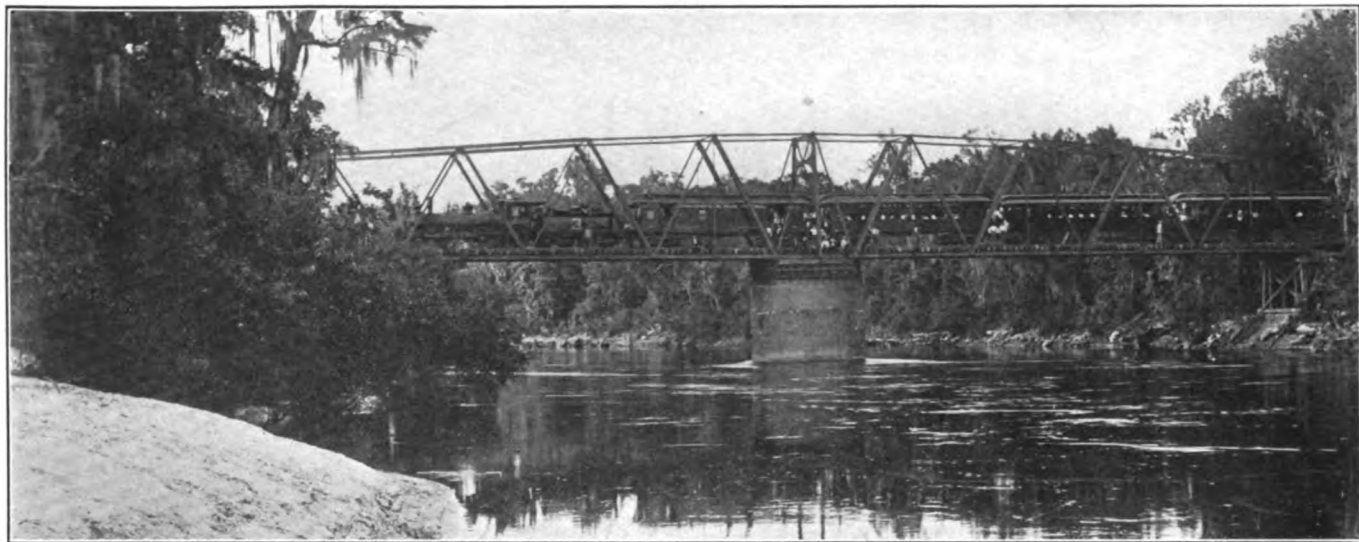
The picture shows a car being loaded with Dixon's Crucibles to be shipped to one of our customers. There is nothing remarkable in a mere carload of crucibles perhaps, but the time, the place and the photographer being handy, were combined with the result shown on this page. There is something economically unique in the use of Dixon's Crucibles, however, as is testified to by users who tell us of the good service our crucibles give. Even though we cannot sell you a carload of

Dixon's Crucibles, we would be very glad to have a small trial order, since we believe it would result in mutual profit.

EASILY EXPLAINED

"Do you understand this building loan scheme?"

"Sure! They build you a house and you pay so much a month. By the time you are thoroughly dissatisfied with the place it's yours."—*Ladies' Home Journal*.



DOWN UPON THE SUWANEE

We reproduce herewith a glimpse of the Suwanee River, made famous by song, and the steel bridge which enables the Florida Railway to cross it. We are very glad to be able to print in this connection the letter from Mr. T. P. Alston, General Superintendent of the road. This was sent to our Atlanta office.

FLORIDA RAILWAY COMPANY,
T. P. ALSTON, General Superintendent.

LIVE OAK, FLORIDA, Aug. 17, 1910.

Joseph Dixon Crucible Company.

DEAR SIR:—Your letter of the 3rd to Mr. Frank Drew, Jacksonville, has been referred to me for reply.

I beg to advise that we only have one steel bridge on our line, which has been painted with various metallic paints. I painted it with your graphite paint about six years ago, and so far have found this paint the most satisfactory paint I have ever used for steel bridges in the experience of about thirty years in the maintenance of such structures. The principal advantages of this paint are as follows: in the first place, it can be put on the bridge by any kind of a workman; in the second place, it seems to preserve the iron surface from rust almost perfectly; in the third place, comparatively speaking, it is an absolute resistant of brine trouble, resulting from the leakage of salt or chemicals from cars.

Considering the known results as above set forth, this paint is the most economical and costs less in the long run, as while insuring permanent durability, it will also cover more to the gallon.

Yours very truly,
(Signed) T. P. ALSTON,
General Superintendent.

DIXON'S CRUCIBLES—THEY MAKE GOOD

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—With the last shipment of crucibles from you, we received a little card with information and directions thereon, relative to the treatment and use of crucibles. We thank you very much for the same, and in connection would

like to let you know something of the good service we think we are getting from your crucibles. Five of the last crucibles we have used averaged forty-six heats to the crucible, and another gave sixty heats. We thought you would be glad to know of this and we are glad to tell you of it. Please do not use our names in advertising; if you wish to state the facts however, you may do so.

Of course, we all understand that the life of a crucible depends largely upon its usage as well as upon the crucible itself and in the case just cited, we believe the credit is due both.

Trusting this knowledge will be satisfactory to you, we remain,

A PRAYER

By H. A. WALTON

"I would be true, for there are those who trust me;
I would be pure, for there are those who care;
I would be strong, for there is much to suffer;
I would be brave, for there is much to dare."

—*The Melting Pot.*

WHAT PETROLEUM YIELDS

In Gasoline, Kerosene and Lubricants

Yield from Pennsylvania Crude Oil

Gasoline, Benzine and Naptha	16.5%
Kerosene	50.
Lubricants	15.
Wax, Residue, Waste	18.
	99½%

California Oil

Gasoline	2.8
Kerosene and Distillate	37.5
Lubricants	34.1
Wax, Asphalt, Residue, Loss	25.6
	100%

Gasoline has increased from 14,000,000 gallons in 1895, to 50,000,000 gallons in 1910.

The tail wags the dog. Gasoline, formerly a by-product of illuminating-oil refining, is now the only petroleum product which is taxing the capacity of the refineries.

WHAT'S IN A NAME

By H. S. SNYDER

We have used the above hackneyed title because that is what we are going to talk about. When Shakespeare (or Bacon, if you insist) originally promulgated this thought, he gave as his decision that the name has little influence on a situation. This may be in some instances, but in others we feel sure that the opposite is the case.

For instance, take the political situation today. There seems to have developed quite a breach in the Republican party, the branches of which, because of the lack of better terms, are usually indicated by the names, regular and insurgent. It seems reasonable to suppose that the rank and file of both regular and insurgent wings stand in the ultimate analysis for the same thing, namely, manhood and integrity. The name "insurgent" however, is distasteful to many, and those so affected would vote for a regular candidate (anything from "almost human intelligence" up) in preference to an insurgent, even though he might represent the highest type of a man. The pity of it all is that the majority of us basically agree, but our careless selection of terms results in a veritable Tower of Babel with the same historical result.

In the commercial field the selection of names is a highly important matter. There are a number of names that represent very nice distinctions and have no small potentiality in the way of sales possibilities. Observe the value of the term "Non-Fluid Oil." As a general proposition, oil is considered a superior lubricant to grease. Probably if the average person was asked the name of some form of lubricant, he would think first of oil. On the other hand, grease is considered to have greater economical efficiency due to the fact that it is less apt to run to waste and best adjusts its feed to changing conditions of actual service. The term "Non-Fluid Oil," therefore, immediately suggests the advantages of both oil and grease with the disadvantages of neither—an oil lubricant that feeds efficiently and avoids waste.

Another example of nicety in name selection, is provided by a certain manufacturer who prepares artificial gems, being especially noted for his pearls. To call these imitation or artificial pearls, would probably be condemning them immediately in the minds of many possible purchasers. This pitfall is avoided by calling them scientific pearls, which not only largely forestalls the artificial thought, but suggests in its place the idea that the gems are patterned along Nature's lines. In a nutshell, artificial suggests an association of undesirable ideas, while scientific suggests an association of desirable ideas.

Of course there are a number of names and words which commercially would mean nothing at all had it not been for the advertising in some form or another that has built up a reputation of value to them. For instance, in the baking powder field, the word "Royal" stands for quality. Tiffany is supposed to represent a high water mark in precious metals and gems, while Huyler's hold sway in candy, etc. Note that these names are accepted as standards without actual evidence. All the facts are missing ninety-nine cases out of a hundred. Probably only the minutest fraction of those who, for instance, have eaten Huyler's candy ever saw even the outside of Huyler's establishment. They have no definite information concerning the quality of materials that Huyler

uses; they know nothing about sanitary and scientific methods that Huyler may or may not use. It is largely a matter of faith, a faith that dwells in the name. And the greatest book in English literature tells us that a good name is rather to be chosen than great riches. It is, however, not unusual for great riches to follow the making of a good name.

MANUFACTURER VS. FARMER

Whether it is better to be a manufacturer or a farmer, seems to be well answered in a speech made by the Honorable Reed Smoot, U. S. Senator from Utah.

In comparing the farmers' condition at the present time with his condition in 1896, the Senator shows that where the price of practically all commodities have shown some advance during the past few years, the products of the farm show a much greater advance than do the prices of the products of mines and manufacturers.

Farm land itself has advanced in value rapidly and everything produced on the farm has also advanced materially. The financial condition of the grain raiser of the Northwest, the general farmer of the Middle West, the cotton planter of the South is better than ever before. Financially the farmer has become independent, the rural free delivery and the telephone have placed him in touch with the world and he is as familiar with current events as is the city dweller.

The prices of the following farm products have practically doubled; the advance being as follows:

Corn 118.4 per cent, Wheat 88.1 per cent, Corn 92.2 per cent, Oats 132.2 per cent, Rye 117.1 per cent, Barley 126.8 per cent, Hay 49.5 per cent, Hops 300.4 per cent, Potatoes 73.7 per cent, Flax seed 142.4 per cent, Fat Cattle 92.7 per cent, Fat Hogs 172.7 per cent, Dairy Butter 57.3 per cent, Eggs 107.3 per cent.

The real value of any article is its exchange value. The real worth of farm products is measured by their values when compared with the values of articles which the farmer desires to purchase. Senator Smoot, therefore, compiles various tables showing the exchange values of corn, wheat, cotton, etc.

The tables are especially interesting and we regret that we have no space in which to publish them.

As an example, however, it is shown that twenty pounds of butter would buy twenty-nine pounds of coffee in 1896, and seventy-five pounds of coffee in 1910, or 130 pounds of granulated sugar in 1910 against eighty-two pounds of sugar in 1896.

Altogether, it would seem as if the manufacturer might well envy the farmer.

THE ELDORADO AND THE ARTIST

Our Buffalo office received the following letter from Mr. Levy of the art staff of the well-known Buffalo printers, The Matthews-Northrup Works.

"Have been giving your "El Dorado" graded pencils a fair test and find them not only as good but superior to any graded pencil I have ever tried. I heartily recommend same for illustrating and designing.

"Yours very truly,

(Signed) "ALEX. O. LEVY,

"THE MATTHEWS-NORTHRUP WORKS."

SOME KISSES FROM SARAH

Sam Davis, the Nevada journalist, brother of Bob Davis, the inventor of wooden bait for bass and also editor of a flock of Mr. Munsey's magazines, is a great friend of Sarah Bernhardt.

One time, when the immortal Sarah was in Nevada, where Sam lives and edits the *Carson Appeal*, she stopped over to see Sam. As she was leaving she threw her arms around Sam's neck and kissed him.

"That," said the divine Sarah, "is for the *Carson Appeal*." She kissed him again.

"That is for the *San Francisco Examiner*."

She kissed him a third time.

"That is for yourself."

"There's a lot of small papers through the State I represent as well as the *Examiner*," said Sam, "and I am sure they would all like to hear from you."—*Saturday Evening Post*.



**DIXON'S PAINT ON ELMER P. MORRIS
TROLLEY POLES**

The above view shows the exhibit of The Elmer P. Morris Company, the well-known makers of trolley poles and allied fixtures. All the poles shown were painted with Dixon's Silica-Graphite Paint, which gave them a pleasing and attractive appearance.

Dixon's Silica-Graphite Paint is quite widely and satisfactorily used by trolley companies for the painting of all exterior metal work and gives its usual good protection in this service. We shall be glad to take the matter up with any who feel that their maintenance cost, in the way of repainting, is somewhat higher than it should be.

CRUCIBLE STEEL MIXTURES

Boiler punchings are very easy to pack into crucibles, and for that reason are preferred as melting stock in making crucible steel castings. Their composition should approximate:

	Per cent
Carbon.....	0.15
Manganese.....	0.26
Phosphorus.....	0.5
Sulphur.....	0.4

The crucible should be charged before being placed in the furnace, and a cover, which may consist of a bottom of an old crucible, is luted on to protect the metal as much as possible from the injurious effects of the flame. The cover should be pierced with a two inch hole through which the progress of the heat may be observed and the final additions made. This hole is in turn covered with a piece of fire brick, which is easily pushed aside and replaced as occasion requires. A deep cover, such as the bottom from an old crucible, cut high up, possesses some advantages, as it permits a greater quantity of cold metal to be charged than a flat one, inasmuch as after the cover is mudded on, the punchings can be filled in, through the hole. In using a new pot it is advisable to get it as full as possible, as subsequent charges are generally reduced, so that no two will have the same slag line. Therefore, if the pot is well filled at the first melt, it is possible to obtain the maximum output of melted metal from each crucible.

A charge of all punchings may consist of boiler punchings 100 pounds. When a thin wrought iron bar inserted through the peep hole comes out coated with slag only, the metal is sufficiently hot for the additions, which are as follows:

80 per cent ferro-manganese.....	1 pound
50 per cent ferro-silicon.....	1 pound
Pure aluminum.....	½ ounce

The additions must be broken into small pieces, about the size of a hazel nut, and are added to the steel in the crucible by means of a section of two inch gas pipe, which is passed through the hole in the cover of the furnace, to the hole in the crucible cover, and the manganese and silicon are allowed to slide down the pipe. Charcoal is sometimes used to increase the carbon in the steel, and one ounce of charcoal is generally figured as adding 0.04 per cent of carbon, and in a new crucible add 0.1 per cent of carbon. This has to be taken into consideration when figuring out the mixtures.

The following alloy is harder than the one just given and shows a dense white fracture: Charge punchings, ninety-six pounds; charcoal, eight ounces; when melted add (fifty per cent) ferro-silicon, ten ounces; and pure aluminum, one ounce.

An ordinary grade of tool steel can be made from the following mixture:

Tool scrap.....	25 pounds
Bar iron.....	45 pounds
Punchings.....	20 pounds
Washed metal.....	10 pounds
Charcoal.....	5 ounces

Melt, and add:

Ferro-chrome.....	3 ounces
Ferro-manganese.....	4 ounces
Aluminum.....	½ ounce

—Reprinted from *Foundry*.

SICK MACHINERY

Dixon's Flake Graphite will not set or repair broken parts.

Dixon's Flake Graphite will not cure parts out of alignment, but it will help them greatly.

Dixon's Flake Graphite will not cure damaged nuts, but if taken in time, before the nuts become rusted on, it will prevent any rusting and will enable the nut to be removed with ease.

We offer the following prescriptions for sick machinery.

FOR HOT BEARINGS

R Open and examine parts and see if clean and free of all grit and dirt.

If not perfectly clean, wash out with kerosene which will remove dirt and gummy deposits.

Rub surfaces well with Dixon's Dry Flake Graphite. Put parts together, see that the oil or grease you are using is of good quality.

That may be all that is needed. If not, add if possible, a little of Dixon's Finely Powdered Flake Graphite to the oil or grease—about one teaspoonful to the quart of oil or grease.

If bearings are close or small always use Dixon's Finely Powdered Graphite No. 635.

FOR NUTS AND GROUND JOINTS

To insure that nuts and ground joints shall not be affected by dampness or rust, and to make certain that they can be removed with ease at any time, use

R DIXON'S FLAKE GRAPHITE and mix with oil or grease into a thick paste and apply before assembling.

DIXON'S GRAPHITE COMPOUND is especially prepared for such use and is recommended as somewhat superior to any mixture the engineer may prepare.

DIXON'S COARSE FLAKE, MEDIUM FLAKE, OR FINELY POWDERED FLAKE No. 635, may be used according to requirements. All parts should be thoroughly cleaned before treatment.

KNOTS AND MILES

The statute mile is 5,280 feet.

The British Admiralty knot or nautical mile is 6,080 feet.

The statute knot is 6,082.66 feet, and is generally considered the standard. The method of computing the number of feet in a statute knot is as follows: The circumference of the earth is divided into 360 degrees, each degree containing 60 knots or (360 x 60) 21,600 knots to the circumference. 21,600 divided into 131,385,546—the number of feet in the earth's circumference—gives 6,082.66 feet—the length of a statute knot.

Knots.	Miles.
1	1.151
2	2.303
3	3.454
4	4.606
5	5.757
10	11.515
20	23.030
25	28.787

—*The Nautical Gazette.*

BENJAMIN FRANKLIN ON ENEMIES

January being Franklin's birth month suggests the following letter which was written by him to John Jay, dated January 6, 1784, and serves to show the character of Benjamin Franklin as he himself saw it. It was written in true Franklin style.

"I have, as you observe, some enemies in England, but they are my enemies as an American; I have also two or three in America who are my enemies as a minister, but I thank God there are not in the whole world any who are my enemies as a man; for by his grace, through a long life, I have been enabled so to conduct myself, that there does not exist a human being who can justly say, 'Ben. Franklin has wronged me.' This, my friend, is in old age a comfortable reflection. You too have, or may have, your enemies; but let not that render you unhappy. If you make a right use of them, they will do you more good than harm. They point out to us our faults; they put us upon our guard and help us to live more correctly."—*The Wisdom of Benjamin Franklin.*

In the December issue of GRAPHITE, on page 2231, there is an article taken from *Foundry News*, entitled "HOW TO PLACE METAL IN CRUCIBLES." A footing note should have been added to that article, but was omitted. In the main the article is correct, but as GRAPHITE goes to technical people, it may be well for us to add a few words before some of our friends "call us down."

In the article copied from *Foundry News*, appeared the words: "Graphite is an inert substance, and as graphite is the crucible's ingredient, the only expansion comes from its clay body."

When graphite is used, as it is, as a pigment for the manufacture of paint, it may for all practical purposes safely be termed "an inert substance," for the reason that graphite is not in any way affected by the many things that are apt to destroy so many paint pigments. Under all ordinary conditions graphite is inert and is not affected by acid or alkali, by heat or cold; it undergoes no change when exposed to the air or when immersed in water.

Under high heat, however, and by high heat we mean heat of 1,000 or 2,000 degrees centigrade, graphite is nearly as expansive as clay or platinum, and it is very important that it should be so as otherwise a crucible would lose its strength under high heat. Under high heat graphite is not an inert body, it is quite the opposite. It is very active both physically and chemically at a high heat.

Graphite in a crucible acts physically as a stiffener of the mixture; as a regulator of the heat and thereby of expansion. It expands together with the clay and it acts as a conductor of heat, enabling the metal to be melted much quicker than it otherwise would be if the graphite did not form a part of the crucible.

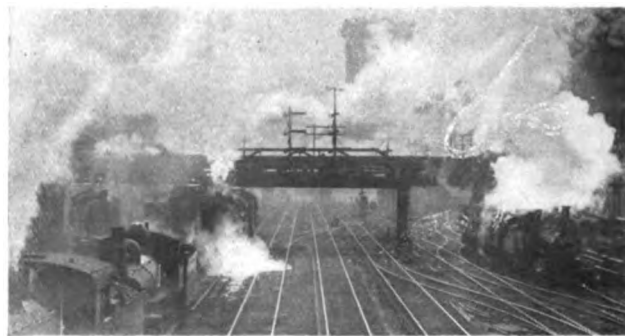
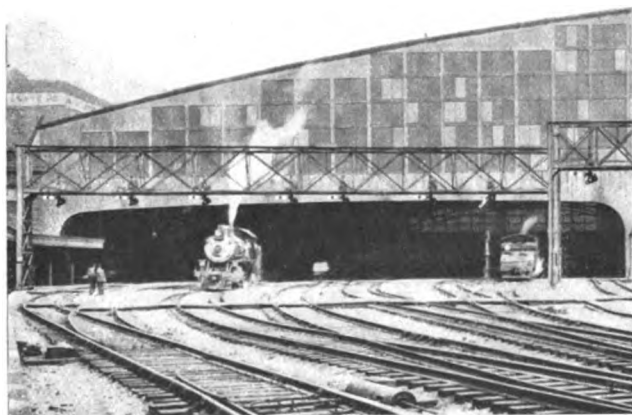
The moral, if that term may be used, of the article mentioned still remains good, for if cold ingots are wedged and jammed in tight, their expansion, which is more rapid than the expansion of the crucible, will possibly cause the crucible to crack before the melting point is reached, and with the cracking of the crucible comes the leaking of the metal. For this reason the metal placed in a crucible should never be jammed in tightly.

Want a Copy of the New Dixon Railroad Book?

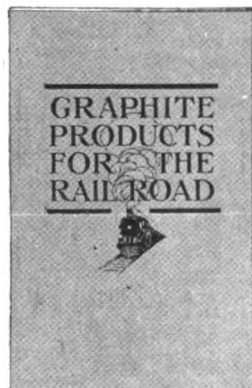
To begin with, this is a railroad book exclusively, and for that reason will be of interest only to railroad men. All those connected with the mechanical departments should write for a copy since it includes the entire range of Dixon's products that has been found to meet with successful use in railroad service.

This booklet not only makes you conversant with the entire Dixon line of products that are adaptable for railroad work, but it describes wherever possible how and where each product should be used.

Maintenance cost is, as all railroad men know, a great big item and its reduction is a step toward greater efficiency. Dixon's Silica-Graphite Paint has proved its exceptional ability to protect all steel work, and thus reduce maintenance cost of bridges, signals, water towers, and standpipes.



Dixon's Lubricating Graphite has a similar effect on engines and machines by reducing cost of repairs due to friction troubles. A number of roads have officially adapted Dixon's Air Brake Grease and find that it fully meets the rigid requirements of the air brake system.



Then there are Dixon's Engine Front Finishes which come prepared in several forms and give different finished effects according to preference.

Several pages are included on graphite lubricators adapted to use on the locomotive. Illustrations and descriptions occur in this connection showing exactly how lubricators work.

In addition, such products as Dixon's Graphite Greases for curves, center plates, etc., Dixon's Crucibles, Facings and Marking Crayons are included. There is not space here to dwell on them all, but it will pay you to be posted about them.

Some day it is more than likely that the "man higher up" may ask you what you know along this line. Then is the time you will want to know it, and now is the time you can get the Dixon booklet that will tell you about it. Write for free copy 190-R. R.

Joseph Dixon Crucible Co.,
Jersey City, N. J.

Oldest and Largest Graphite Concern in the World.

GRAPHITE

Vol. XIII.

FEBRUARY, 1911.

No. 2.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

ADVANTAGE OF GRAPHITE FOR BOAT BOTTOMS

Since, as the naval architects tell us, fully one-half of the propulsive force of a power craft is used to overcome surface friction, it would appear that any possible refinement of the immersed surface of the hull would be well worth while. We are all, of course, familiar with the marked reduction of speed which is apparent when a boat's hull has become foul with barnacles and other marine growth. We also appreciate that any minor roughness from whatever cause does its part in retarding the vessel's progress through the water. It is evident, then, that the smoother the craft's underbody can be made the greater is the speed that can be expected from engines of any given horsepower.

Many of the anti-fouling bottom compositions now upon the market will give a very smooth and satisfactory surface, and there are racing motor boatmen who pin their faith to "Marblehead Green," "McInnis Compounds," or "Bridgeport Bronze." Many other skippers prefer a bottom of spar varnish and a considerable number of racing craft are planked with cedar, mahogany or teak and "finished bright" all over, their hulls being rubbed to a piano finish from deck to keel.

It is, however, deemed advisable by many experts to treat the bottom with black lead (or "pot lead," as it is often called) when any race of unusual importance is upon the program. The bottom should first be put in perfect order. All cracks and crevices should be carefully filled with white lead, putty or elastic seam composition and the whole bottom well above the water line should be made as smooth as fine sand-paper can make it.

The usual methods of applying the powdered graphite (Dixon's Yacht Plumbago is the usual material) to the boat's underbody are as follows: Either the graphite is mixed with shellac to a very thin consistency and applied with a soft brush; or the surface to be treated is first shellaced and the graphite is shaken over the surface, while it is still sticky, through a cloth bag of moderately coarse texture. Only a small area should be treated at a time, since the shellac will dry very rapidly. In both cases the entire surface when dry should be rubbed to a polish with a cloth, cotton waste or a soft brush. Any rough places should be carefully smoothed

off with very fine sand-paper. It is probable that such an application of powdered graphite or plumbago is the best method of producing the ideal racing bottom either upon a sailing craft or a power boat. Just how much this surface would assist in producing the highest possible speed is not easy to determine. The gain over a first-class bottom of some good anti-fouling composition would necessarily be rather small. Still, it is the little things that win races and no chance is too slight to receive careful consideration from the wide-awake racing skipper.—ALLAN O. GOULD in *Motor Boating*.

THE TRAVELING MAN

The life of a traveling man is not all honey drip syrup, but did you ever meet a successful one who was not opinionated—and very much so?

Traveling puts a bob-tail on a man's kite, and disillusionizes him. A couple of years on the road are worth half a dozen in a college.

The actual business of contact with purchasers and prospects consumes but a portion of his time; the balance is in riding, or in hotels. The traveling man gets quite a little time to himself and rummages over things in his mind—wondering why this is—and why it isn't.

He gets accustomed to the territory he is traveling, and fails to look out of the windows. So he looks "within," and is often in a state of introspection, reconciling his experiences, deliberating on men and their methods, reasoning things out for himself.

Every man thinks. His reasoning may be defective, but he thinks, none the less. In those thoughts don't go wrong on one thing—that the home office is full of prunes. Don't you believe it. You—the salesman—make possible the home office and that home office is there to help you.

—MILTON HARTMAN in *Advertising and Selling*.

HOW ARE THE MIGHTY FALLEN

During the past holiday season, our Crucible Department sent out a few Christmas blotters on which appeared an appropriate sentiment by Henry Van Dyke. As a result we received the following acknowledgment:

*Mr. Henry Van Dyke, c/o Joseph Dixon Crucible Co.,
Jersey City, N. J.*

DEAR SIR:—We are in receipt of your card of Christmas Greetings for which we thank you. Wishing you the compliments of the season, we remain,

Yours very respectfully,

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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Vice Pres. & Counsel—WILLIAM H. CORBIN
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BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS,
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

PROTECTING BOLT THREADS WHILE HEATING

A recent issue of the *Paper Trade Journal* contained an item on how "To Prevent Pulleys from Loosening." This was in answer to a particular correspondent's question. Among the instructions we find the following:

"When putting on your pulley, have some new bolts made of Swedish iron, make nuts a little longer than common and in putting in the bolts cover the threads with graphite mixed with cylinder oil or some heavy grease; then heat up the bolts to a dull red, then put in the bolts and tighten them. The graphite and grease is used to protect the threads of the bolts while heating."

DIXON's graphite publications sent free upon request.

THIRTEEN YEARS' SERVICE OF A DIXON PENCIL

A Dixon missionary from the Philadelphia office was making his rounds when he came across Mr. George F. Motter, of George F. Motter's Sons, York, Pa. This gentleman told the Dixon representative that he had been using a Dixon pencil continuously for thirteen years—the same pencil, understand. This statement seemed so incredible that our Philadelphia office got Mr. Motter to write a letter embodying this statement, which he very kindly did. We reproduce the letter below:

GEO. F. MOTTER'S SONS,
MANUFACTURERS OF BOILERS AND ENGINES,
DEALERS IN MACHINERY SUPPLIES,
Princess St. and N. C. R.

YORK, PA., November 23, 1910.

Joseph Dixon Crucible Company,
Philadelphia, Pa.

GENTLEMEN:—Replying to yours of the 3rd inst.

The pencil in question is an actual fact, being purchased in 1897 from the Old Crider Store, now operated by H. C. Barnhart, 49 West Market Street, this city. The pencil has been in actual and continuous use since that time in making totals, footings and balances on my ledger. The writer and user of this pencil is one of three brothers conducting one of the oldest manufacturing plants in Southern Pennsylvania, and has been acting secretary and treasurer for over twenty years, and I expect to use this same pencil for the next ten years at least. This record speaks for itself in the recommendation of your pencils.

Yours very truly,
(Signed) GEO. F. MOTTER.

FIRST AID—GRAPHITE

We noticed a little item in *Fibre and Fabric* on "Lubrication." Among other statements we find the following:

"For smoothing down bearings or tiding over an emergency with an overheated box, a good thick oil or light grease mixed with graphite is one of the best lubricants known; care should be exercised, however, if the boxes are of the ring type, to avoid using enough to interfere with the action of the rings for any length of time."

It has ever been the case, when all else fails you can rely on graphite to fill the breach. Many engineers have learned, however, not to wait for failure but avoid it by using small quantities of Dixon's Flake Graphite with their oil or grease. Is it not obvious that if graphite can reduce friction under the very worst of conditions, it can increase efficiency under favorable ones?

BUSY ON DELIVERIES

The San Francisco office of the Joseph Dixon Company is now busy with deliveries and is also getting in a considerable amount of new business. For the last month or two, business has been fine. Manager Bowles is just back from the north after a successful trip. Frank Allen, assistant manager, has been busy with trade in and about San Francisco. Mr. Guyer, who is now in Mexico, reports a fine trade. Some sections of the north have been held up by the forest fires.

—*The Pacific Stationer.*



PHOENIX BRIDGE

Barge Canal and Oswego River

The above photograph shows what is known as Bridge No. 1 on the Syracuse, Lake Shore & Northern Electric Railroad, which is part of the Beebe System of trolley roads. The main span of this bridge is 329 feet. Mr. W. A. Steckel, Road Master, reports that Dixon's Silica-Graphite Paint has given excellent service on this structure, and on several other bridges included in the same system.

THE GROUND HOG FALLACY

The second of February of each year brings renewed talk concerning the little animal that is supposed to be gifted with weather forecasting abilities. This is the day he leaves his winter burrow and comes out to stretch himself. If by chance the sun is shining and he sees his shadow, he knows that six weeks more of winter are due and he promptly returns to his winter home. If, however, the sun does not shine, so the fable runs, he knows that Spring is here. Unfortunately, the ground hog seems to be the only one that really knows anything about it.

Last year the writer made a point of noting the weather in this locality. The sun shone on the second of February, and therefore we were apparently due to have six weeks more of winter. This was not the case, however, there was only one snow storm and the snow had practically left the ground

within a week. There were two cold snaps, during one of which the thermometer touched a record point, as the writer remembers the newspaper reports, but neither spell lasted seventy-two hours.

Those who are interested in this matter may perhaps be able to learn from the records what the weather was for six weeks after February 2, but at least we may all be reassured to know that the ground hog is not infallible.

WHAT THE MAIL MAN BROUGHT US

Our Chicago office notifies us of the receipt of a letter addressed to the "Joseph Dixon Bible Company." At the first glance this seems to be an unaccountable twist given to our incorporated name, but it probably is accounted for by the fact that many infer that the word "crucible" is derived from the same stem as crucifix and has, therefore, a related meaning. Perhaps a somewhat irreverent suggestion is made by our Advertising Department that the name is suggested because of the truth of the Dixon literature.

TEACHER was telling her class little stories in natural history and she asked if anyone could tell her what a ground hog was. Up went a little hand, waving frantically.

"Well, Carl, you may tell us what a ground hog is."

"Please, ma'am, it's sausage."—*Everybody's Magazine*.



DIXON PENCIL DISPLAY BY WHITE & FARNSWORTH

The illustration herewith is a photograph of a window display in the store of Messrs. White & Farnsworth, 425 Montgomery Street, San Francisco. This exhibit was possible through the energy of our representative on the coast, Mr. Bowles, and the enterprise of Messrs. White & Farnsworth.

So far as we know, it is the first window display of Dixon's Pencils ever made in the city of San Francisco, but with the pushing activity of Mr. Bowles and the interest shown in the Dixon Lead Pencils by the dealers of San Francisco, we have no doubt there will be many window displays to follow this one.

VALVES AND PACKING TO WITHSTAND ACID

Referring to Mr. Demarle's inquiry in the October 18 issue under the above heading, I would say that probably the best results could be obtained by substituting lead valves for rubber. Valves made from lead are soft enough to prevent leakage and at the same time are very little affected by acids. For the pistons in the acid ends of the pumps either lead rings

or metallic packing could be used. This metallic packing, which is shredded babbitt metal mixed with graphite and oil, could also be used to advantage in the stuffing boxes.

JOHN FRENCH, Washington, D. C.

—From *Power and The Engineer*.

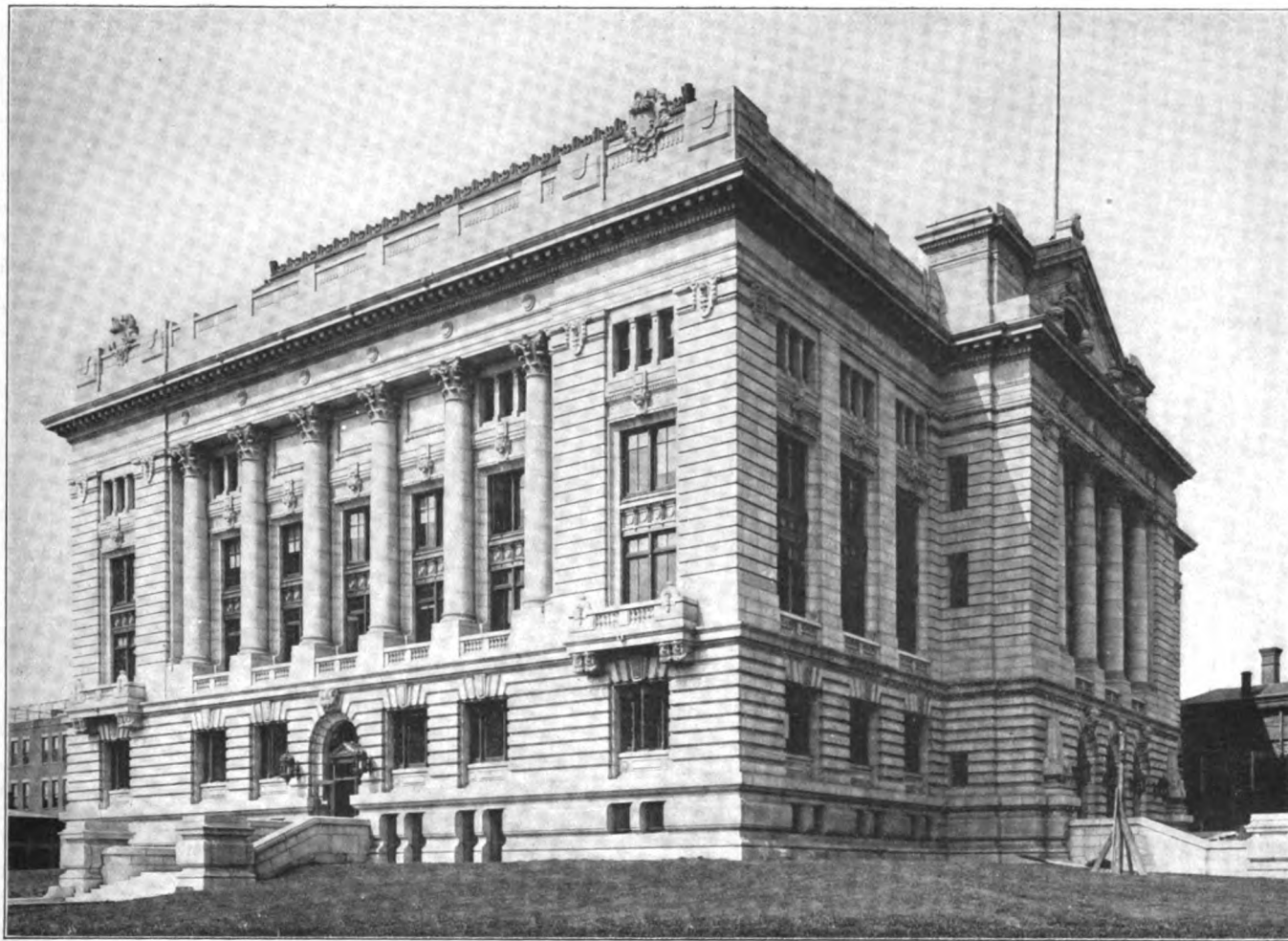
WHAT'S YOUR VERDICT?

Out from the dark tarn, driving mist,
Furtive and white,
Passes, as glides a shackled fist,
Into the night.

Up from the wild mere startled wings
Chillingly sweep,
Circling like restless, timid things
Over the deep.

Reader, we have here of magazine rhyme
A sample chunk;
Some people call this poetry sublime;
I call it punk.

—*Louisville Courier-Journal*.



THE NEW HUDSON COUNTY COURT HOUSE

The above illustration shows a picture of the recently completed Court House Building in Jersey City. This, as will be seen, is a handsome, sturdy piece of architecture of which the city is quite justly proud.

The general style of the structure is modern renaissance. This style was selected because of its pliability and because in addition it gives grace, vigor and dignity. The necessity of giving light to the various court rooms and offices, required a modification of the style, but the architect has done his work with unusual skill. The result is a building that conforms nicely to the requirements of the artist's code and at the same time is eminently fitted for the purposes to which it is to be devoted.

The first floor of the building will be devoted to offices. On the second floor facing Newark Avenue, is the Freeholders' room. It is done in wood with black and gold German marble in the entrance. The paintings, not yet done, are the work of Howard Pyle, who is well known not only for his mural paintings, but also for work of great merit in some of the current magazines.

The law library is on the mezzanine floor, facing Baldwin Avenue. It is thirty-two by forty feet in size and is finished in wood. The wainscoting, bookcases and beam ceilings are of dark flemish oak. There are a few bookcases in the main room and two large steel lined cases adjoining it have a capacity of several thousand volumes.

As you no doubt have already guessed, the entire tonnage of steel contained in this structure is protected with Dixon's

Silica-Graphite Paint, this material being specified by Mr. Hugh Roberts, who was the architect for the building. The Wells Brothers Company of New York were the builders.

AIR, FOOD AND DRINK

As we remember it from our physiologies, one can live without food for some twenty days or more; without water one may survive for quite a number of hours; without air, however, it is only a matter of a very few minutes before you join your honorable ancestors.

The moral of this somewhat random introduction is the importance of ventilation. We do not recall exactly which concern it is at this moment, but we saw not long ago a statement emanating from a builder of ventilating apparatus that the mind was made sluggish to a very great degree through the absence of fresh air, while its presence serves to vitalize and energize the cerebral matter.

It is true in the average office that facilities for proper ventilation without directing drafts upon the supersensitive are very poor. We believe offices so situated should look into the matter. Even if they do not believe in the sluggish brain theory, they can easily appreciate the value of keeping every one contented and avoiding the generation of more or less childish animus that is bound to result from a clashing of the pro and con "ventilationists."

LIBERAL-MINDEDNESS is shown not by what you believe but by what you are willing others should believe.—*Life*.

DIXON'S PAINT ON SHINGLE ROOFS

The letter reproduced below is quoted to show the value of Dixon's Silica-Graphite Paint as a preservative and beautifier of shingle roofs:

*Joseph Dixon Crucible Company,
Jersey City, N. J.*

GENTLEMEN:—Enclosed you will find a photograph of my residence at Palisades Park, N. J.

This house was built in the summer of 1901; the following October, as an experiment, the rear extension was painted with Dixon's Natural Color Roof Paint. This test proved



more than satisfactory. It has now been painted nearly nine years and no expert can tell whether it was painted nine years ago or nine months. The paint is not only intact but gives the appearance of slate.

On a portion of the roof not painted, it was found that scores of shingles were ready to drop off and every shingle had to be renailed. On the part of the roof that was painted nine years ago, every shingle and every nail is as secure as the day the house was erected.

Very truly yours,
(Signed) JOHN H. BAIRD.

WE PAY FOR WHAT WE NEED

In an address given by Mr. Hugh Chalmers, of Chalmers-Detroit fame, he brings out a thought new perhaps to many of us. It is to the effect that we pay for what we need, even though we may fail to make the actual purchase. It is an analysis and extension of the old school wisdom of our mothers who contended that it was better to pay grocer and butcher bills than doctor bills.

Mr. Chalmers has given an illustration as follows: Suppose you need a winter overcoat but do not purchase one. Suppose you even put the money that you would have spent for that purpose in the bank. You might reason that you have actually saved the cost price of the coat, but as a matter of fact you have not done so; you have paid for the coat in some one or more of a number of ways. In the event of excessive exposure, you would probably pay for it in doctor bills and medicines, but even if it does not go to this extreme you pay for it in having disagreeable colds that not only bring discomfort, but actually lower your mental and bodily efficiency.

There is no fallacy in this argument; the only place a fallacy is apt to creep in is in deciding what is a need. There are

many things you think you need that you really do not need. If you accept a near-need for a real need, your argument will lead you astray, but given a bona fide need, there is absolutely no escape from the conclusion that you pay for it even though you do not get it.

While we have your attention we want to show the application of this principle to some of our products. Suppose an engineer says, for instance, that he does not need Dixon's Flake Graphite, that he can easily get along with some cheaper substitute or can dispense with it entirely. He may figure that he has saved the purchase price of Dixon's Flake Graphite, but there comes a time when the oil fails temporarily for some reason. As a result he scores the cylinder or cuts a bearing and the cost of this damage equals or exceeds the cost of Dixon's Flake Graphite which would have prevented it.

Let us suppose another case in which the manufacturer, whose stacks need Dixon's Silica-Graphite Paint, thinks he will put off repainting for a year or two. He figures he has saved the cost of repainting; as a matter of fact, he has paid the cost even though he has not had the painting done. A paint can only conserve the strength of materials, it cannot add to their strength or replace any lost strength. Therefore, a structure that is exposed to deterioration or decay when it should be painted, gives up just so much of its vitality that will never be replaced and brings nearer the time when it will be necessary to entirely displace the old structure and erect a new one.

There are a number of little ways one pays for things, the money equivalent of which it is impossible to calculate. For instance, take the manufacturer and the unpainted stacks previously referred to. All those who pass his plant and note the poor condition in which his stacks are kept, rate him as careless and lacking in pride with reference to his plant, and it is only a step further to conclude that his attitude is the same towards his product. His own mental attitude quite likely gives up something too, if he is the right kind of a man. He knows his stacks need painting and yet he wants to save the money. Even while he is following out the policy, he realizes it is short-sighted, and he, therefore, becomes a sort of dual personality in which one self condemns the other. This is not far fetched; you have done the same thing yourself. You have committed acts that you knew were not exactly the right thing and that you knew you would regret later—you understand the price you paid in the form of dissatisfaction with yourself.

You pay for what you need. There is absolutely no doubt about it; therefore, it pays every time to get what you actually need and pay the price, whether this is to be money, time or effort. You pay for what you need. See that you get it.

HEAT PROOF PAINT

Of Interest to Motor Car Owners

To make a good cylinder and exhaust pipe paint, use two pounds of black oxide of manganese, three pounds of graphite and nine pounds of Fuller's earth, thoroughly mixed, to which add a compound of ten parts of sodium silicate, one part of glucose and four parts of water, until it is of such consistency that it may be applied with a brush.

—*New England Automobile Journal.*



ROSS E. HENWOOD AND HIS OHIO

We are very glad to reproduce herewith a letter from Mr. Henwood, driver of the Ohio Motor Car Racing Team. The picture occurring above, shows Mr. Henwood in his Ohio Car. Mr. Henwood is a believer in the use of Dixon's Graphite because he knows what it can do. His letter runs as follows:

CLEVELAND, O., Oct. 7, 1910.

Joseph Dixon Crucible Company.

GENTLEMEN:—I have used Dixon Graphite for tires on my racing car and find that the tires hold up fifty per cent better for the reason it keeps them absolutely dry in the wet weather; also the graphite working into the pores of the casing, thus making it less easy to puncture. I have driven 10,000 miles without a puncture with graphite in the tires. I find it great stuff.

Yours truly,

(Signed) ROSS HENWOOD,

Driver of the Ohio Motor Car Racing Team.

CINCINNATI, OHIO.

ADVERTISING PAYS

Under the above heading *Batten's Wedge*, the house organ of the George Batten Company, reproduces a letter forwarded to them by the Phillip's Publishing Company. This will be of especial interest to retailers, but is of general interest to all as exemplifying what the Phillip's Company has designated "one of the indirect results of advertising." The letter follows:

"I am engaged in the retail merchandise business," writes Mr. V. E. Danner, of one of Oklahoma's fastest growing cities. "Having once been in the newspaper business, it naturally is my belief that 'advertising pays.' Therefore I do a good deal of it. Several weeks ago I hit upon a novel scheme that may seem to many to be a waste of time. Experience has proved the contrary to me, however. One day I was looking through the ——— Magazine's advertising pages. I became interested in the many things advertised there that I had on my shelves for sale. So I clipped out all I could find—seventeen in number—and pasted them on blank pieces of paper, each one to itself. Underneath each advertisement I had printed in neat letters the following 'These goods for sale here.'

Gathering up these seventeen separate sheets I had them pasted on the inside of my show window so that they could be read by passers-by. I was almost alarmed at the result. *My sales on these particular goods increased during the next week after this experiment was tried nearly fifty per cent and have been increasing ever since.*

"I picked up my ——— Magazine again and ran through its advertising pages once more. I found the advertisements of nine more articles which I sold, but did not handle the particular brands advertised. *I resolved that when my stock runs out my next order would be for magazine-advertised goods.*"

AMERICAN MANUFACTURERS' EXPORT ASSOCIATION

In September 1910, a permanent organization known as the American Manufacturers' Export Association was formed in the City of New York. The Association is officered and directed by aggressive and successful business men of long practical experience in export management of American manufactures.

Among the names of those represented we find those well known ones of The Victor Talking Machine Company, Eastman Kodak Company, National Cash Register Company and the Westinghouse Electric and Manufacturing Company.

The aim of this association is to bring together a constantly increasing number of such men and by their united strength make possible closer and more friendly acquaintance among the export managers, as well as carry into effect certain definite aims for the benefit of the American manufacturers.

Among the objects the association desires to accomplish, are the following: The advancement of our foreign trade interests; the establishment of equitable freight rates and better service; protection of the trade marks of American manufacturers.

To combat the many evils now existing in the field—evils which thrive on the general ignorance of business conditions. To enhance the dignity and standing of the manufacturers who are members of this association; to investigate, for the benefit of the members, organizations purporting to exist for the purpose of aiding the American manufacturers, such as publications, bureaus, etc.

Hon. John Barrett, speaking before the association at the time of its organization, made the following statement: "I believe by far the greatest opportunity for the expansion of the United States markets lies in the Latin American countries.

"I have no desire to decry the possibilities of the Orient and Europe, but the fact remains that the line of least resistance lies among the twenty republics to the South of us. In Europe and the Orient, American manufacturers have always been and always will be confronted by cheap labor in combination with the capability to supply raw products. In China, for example, with its population of 300,000,000, eighty per cent belong to the laboring class. In Japan, with its 50,000,000, the percentage is almost as large. There are undoubtedly great opportunities in these fields and it is not my wish to deprecate efforts toward exploiting those opportunities, but my experience has taught me that far greater and more easily realized opportunities are to be found for the United States manufacturer among the various countries of Latin America.

"These nations cover an area of 9,000,000 of square miles, or three times the area of the United States. They have a combined population of 70,000,000, or seven-ninths that of the United States.

"It is not true that American manufacturers have neglected the Latin American field completely. The United States trade in Argentine, Brazil and other countries has developed rapidly, although in some countries, to be sure, not so rapidly as that of Germany and Great Britain. American manufacturers have been neglectful of their opportunities in so far as they have given the Oriental and European markets an undue share of their attention. When you stop to think that in the last ten years our trade in Latin America has grown 100 per cent you will realize that we have not altogether neglected the field. If we could do this in the last ten years, we certainly can increase it from two to three hundred per cent in the next ten years.

"A territory which has demonstrated its possibilities in such unquestioned fashion, is certainly worthy of the best attention and effort which American manufacturers can put forth.

"I hope that you will do all that you can to develop your commerce in Europe, Africa and Asia, but I want to impress upon you most emphatically the conditions of intelligent effort in a more logical and more promising market—that of Latin America."

ONCE BALD ALWAYS BALD

A certain barber not in the mood to sell hair restorers, and appreciating the company of a reporter during a heavy down-pour of rain, said: "Just call to mind doctors who are as bald as glass globes, and you will know that if there had ever been but one little herb or drug or whatever you might call it, that could bid even a single hair to grow, where there had been ten before, there would be no bald-headed doctors and the discoverer of that remedy would live longer in the hearts of men than the man who was supposed to be able to make two blades of grass grow where but one grew before.

"It is to be reasonably presumed that your doctor does not find pleasure in being bald any more than any other man, and there certainly would not be any bald doctors if hair could be made to grow on bald heads.

"Some are born bald. Some achieve baldness. Some have baldness thrust upon them. So there is baldness and baldness. The born bald usually get over it and live to get it again, either by achievement or having it thrust upon them.

"Really, baldness is a thing that comes on gradually, and the awful day of its complete triumph may be postponed by tonics and almost persuaders, but its final coming is as sure as the frost that nips the posey and the leaf and makes the meadows brown and sere."

The barber added further, "If there is one hair restorative there are a hundred, every one warranted not only to prevent baldness, but to restore to bald heads their old time glory. I have annointed, drenched and plastered the heads of my patrons with tonics, lotions and pomades innumerable and rubbed and manipulated only to give up at last and hand them a card to my wig maker, for you see," seizing his soft, thick, brown hair with both hands and showing a head as white and bare as a billiard ball, "I myself wear a wig."

MELTING POINTS

	Degrees Centigrade	Degrees Fahrenheit
Mercury	—39	—38
Tin	232	450
Bismuth	269	516
Cadmium	322	612
Lead	327	621
Zinc	419	786
Antimony	630	1166
Magnesium	632	1170
Aluminum	657	1225
Calcium	780	1436
Barium	850	1562
Silver	962	1764
Gold	1064	1947
Copper	1065	1949
Cast Iron--White	1075	1967
Manganese	1245	2273
Cast Iron--Gray	1275	2327
Steel	above 1375	2507
Nickel	1465	2637
Chromium	1515	2759
Cobalt	1528	2782
Palladium	1540	2804
Platinum	1780	3236
Iridium	2200	3960
Tantalum	2275	4127
Graphite		Infusible

LOW FUSION ALLOYS

					Deg. Cent.	Deg. Fahr.
4 Bismuth	1 Cadmium	2 Lead	1 Tin		65	149
5.1 "	1 "	2.78 "	1.33 "		70	158
3.7 "	1 "	0.93 "	1.06 "		80	176
1.17 "	0 "	1.16 "	1 "		90	194
8.75 "	0 "	3.48 "	1 "		104	219
208 "	0 "	207 "	119 "		122	251

DIXON's graphite publications sent free upon request.

THE HORSE AND THE MAN

The horse is probably the most valuable animal that man employs in his service. It is true that in many fields electricity and gasoline have replaced him—but the horse is yet a prominent factor in traffic problems.

The service that the horse renders man, we believe, is indisputable; it therefore rests as a moral and economical obligation on man to see that the horse is properly taken care of. The time of the year is at hand when the going is hard and the way is slippery. Don't overload your horse; when you do you lose efficiency just the same as when you overload the electric truck. Keep your horse sharp shod, or fit his feet with some appliance that will enable him to keep upon them. If the horse is left to stand, see that he is well blanketed and by this is not meant throwing the blanket in the general direction of the horse. Put it over him carefully so that the first chance breeze won't blow it off. If there is a brisk wind blowing and the horse must stand some time, don't leave him facing the breeze—he does not enjoy it any more than you do.

We have spoken of this matter previously in our columns and we expect to speak of it again. The horse is under your protection, you are his trustee. He is a sensitive, high spirited animal that appreciates care and attention which is within

your power to extend or withhold. We believe that the satisfaction one gets from properly treating his horse will amply repay him, but even if the satisfaction is lacking, the financial return will more than make it worth while.

If there are any interested in the subject and have not seen a copy of our booklet, "The Horse," we would be glad to send it on request. This booklet contains very little advertising matter, being 99 $\frac{1}{4}$ % pure information on the treatment of the horse in the stable and out.

TO PREVENT SCREW THREADS RUSTING

A mixture of flake graphite and grease applied to screw threads is frequently recommended as tending to prevent the adhesion of the parts due to rust or expansion from heat. Rather a novel recommendation in the same line is to the effect that mercurial ointment similarly applied serves an equally useful purpose. It was formerly employed in marine steam engine practise in cases where the parts of the piston were threaded together. Some such provision should be made on all brake and radius rod connections about the car and any other parts which, though occasionally requiring adjustment, are ordinarily left to themselves in all weathers.

—*The Motor World.*

Every time the belt slips it means that energy is wasted—money lost.

And every time the belt slips it generates heat that dries out the belt—more money lost.

Economy and efficiency demand proper treatment of belts, and proper treatment in turn pays big. For instance, we have run belts in our plants for eighteen years without even taking them up. But we treated them regularly with Dixon's Traction Belt Dressing. This is a paste dressing and the finest leather preservative we know of.

For a quick, convenient cure for slipping belts we recommend Dixon's Solid Belt Dressing. This comes in sticks that conveniently fit the hand, making application easy. If you want a sure cure for slipping that's convenient and harmless, use Dixon's Solid Belt Dressing.

Joseph Dixon Crucible Company,
Jersey City, N. J.

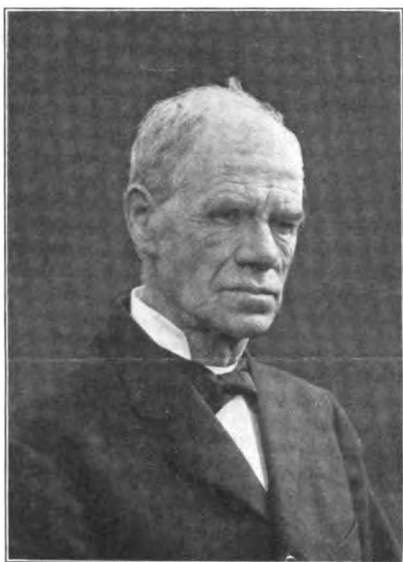


A CHARACTER SKETCH

One of the valuable customers of the Dixon Company is Mr. E. B. Temple of the Miller Lock Company, Philadelphia. Mr. Temple has always been an admirer of the picture of Mr. Joseph Dixon and many have thought there was a striking resemblance between them. That our readers themselves may judge, we show herewith picture of Joseph Dixon as well as that of Mr. Temple.

Being ourselves interested in the photo of Mr. Temple which was sent us, we have had a phrenological reading made for us by Messrs. Fowler & Wells of New York. The reading is as follows:

"The photograph of this gentleman indicates several important characteristics. One is his rugged motive temperament which gives him wiriness and grit above the average man of today, and wonderful enduring power. He is not easily turned aside by difficulties, even although they may look to be mountain high.



Mr. E. B. TEMPLE

"Another point of note is his persistency of character, which gives him stability, will power and a persevering spirit.

"A third element of his character shows in his kindly attitude toward others, through his active organ of benevolence. He is a man who will make but few, if any, enemies, but a host of personal friends. Even persons who do not entirely agree with him cannot help but admire his honesty, thoroughness and sincerity of character. He believes in doing what he has agreed upon and shows the same attitude toward the rich and poor. At least, he shows as much respect for the man of humble appearance as he does for the millionaire. He makes many personal sacrifices, but does not speak of them to others.

"He is a man of considerable judgment, thought and deliberation and is never in too great a hurry to properly weigh a subject and view it from all sides.

"He is not a miser nor a spendthrift, but lays out money advisedly, or, in other words, after examining the material that he buys.

"He is not a man of many words, but when he talks he speaks to the point, uses the right kind of language, and says something that is worth remembering.

"He has always been interested in the development of human character, at least as long as he can remember, and must have begun a study of Psychology by watching animals, birds and insects in their native homes.

"His special memory of associated ideas has been of immense aid to him in recalling historical events and in storing facts and recollecting occurrences. In fact, his analytical memory has aided his memory of names of late years, which has depreciated somewhat owing to the change of activity in his intellectual faculties, for of late years his mind has become much more reflective and philosophic, while formerly it was more practical and scientific. He likes to dip into the books of those men who think they know everything on their own special subject, such as the works of Huxley, Darwin, Spencer, the late Professor James and others, to see how far they are correct according to his judgment and whether they are prejudiced or one-sided in their views. He is a man who is able to see the best side of a person and is able to detect the unpolished diamond, or the nugget of gold in the rough specimen.



JOSEPH DIXON

"He may be a trifle set in his way of looking at things, but he is public-spirited, liberal-minded and broad in his principles of life.

"As a business man he will show good judgment in buying in stock and in understanding the quality of goods. He could have given his attention, however, to study, and in the practical sciences would have stood high in correlating one subject with another in making a practical analysis of subjects like chemistry and experimental work.

"He probably holds distinct views on such subjects as the co-education of young people, the segregation of the negro race, vocational bureaus for high school graduates, the use of arbitration in the settlement of disputes, the need of a universal language like Esperanto, and a universal coinage.

"He is a devoted, constant and faithful friend; a simple liver; a light eater and an advocate of total abstinence from all things that are injurious, like alcohol, tobacco and condiments.

"He must have shown some ingenuity at one period of his life, for he seems able to understand light mechanical work. Thus, if he were engaged in the manufacture of any article, he would know what practical suggestions to offer in order to secure certain results.

"He is a man who cannot very well live to himself, for he prefers to share the good things of this life as well as all his pleasures and joys with other people.

"As a man of affairs he will be orderly, systematic and neat in all his business arrangements, and will select men who are similarly organized to work with him.

"He is not so much engrossed with the affairs of this life as to forget to prepare for the life that is to come.

"The lines of his face indicate great hospitality of character and a leaning toward the new business principle of 'sharing profits.'

"He is a reformer in all methods of life as well as of business, and believes not only in domestic house-cleaning, but that which pertains to politics, religion and education.

"In short, he should have devoted his life to doing good, where he could have been a benefactor to mankind, a hygienist and an exponent of the philosophy that lets in the sunshine and chases away the shadows and the gloom of unbelief, doubt and despair."

THE FEBRUARY TREE

Now blooms for all the world to see
The February cherry tree;
Whereof, with all veracity,
We now set down to history.

First Cupid saw it standing fair
And cried, "A tree, I do declare!"
Then, whipping out his knife, with care
He left initials carven there.

George Washington, he cut it down
In order to acquire renown,
And since in every vale and town
The story serves his fame to crown.

A few years later Lincoln came;
He also wished to make a name.
Pursuing thus the noble aim,
He split it into rails and fame.—*Lippincott's*.

CONDITIONS IN MEXICO

Mr. George V. Guyer, the representative of the Dixon Company in Mexico, writes from 'Frisco, on his return from Mexico, that the recent revolution seems to have been absolutely suppressed in all parts of the Republic outside of the State of Chihuahua, and is concentrated there in a very limited area about two hundred miles west of the capital of the state. It seems to Mr. Guyer that within a very short time the insurrection in Chihuahua will have been completely suppressed and that absolute peace will again reign over the Republic.

Mr. Guyer believes that the result of the recent disturbances in Mexico should strengthen the feeling of confidence with which investors have hitherto regarded the Mexican Government, as it has demonstrated that the present administration was able to deal effectively with the revolt which broke out in widely scattered parts of the Republic at the same time. It was gratifying to know that what might have been very serious trouble with a weak administration was promptly

nipped in the bud, and Mr. Guyer believes that investors who have interests in Mexico, will not be disposed to have their confidence shaken in the ultimate outlook.

Mr. Guyer, after replenishing his samples, etc., at the 'Frisco office, left early in January for a trip down the West Coast of Mexico, expecting to reach Mexico City sometime in February.

GRAPHITE INDUSTRY IN THE STATE OF NEW YORK

In the report of operations and productions during 1909, by D. H. Newland, of the mining and quarry industry of New York State, Mr. Newland reports as follows:

"The American Mine of the Joseph Dixon Crucible Company occupies, as heretofore, the leading place in the industry. For many years it has been the largest and most successful enterprise of the kind in the country. Its position has been attained through experienced management and the perfection of its methods for the separation and refining of the graphite. It has had also the advantage of an unusually rich deposit for its type, combined with certain features which make the graphite more easily recoverable than is often the case. The quartzite that constitutes the matrix is practically free from other scaly minerals, and the graphite flakes are of large size."

Dixon's Flake Graphite

Powdered Form

Perhaps many purchasers of graphite do not know that the celebrated Dixon's Flake Graphite can be secured in finely ground form as well as in the large flake. There are three grades of Dixon's Graphite (referring to fineness of grinding.)

No. 1 is a large flake for use in heavy work.

No. 2 is a smaller flake for close-fitting parts.

No. 635 is a very finely ground flake—practically a powder. It is widely used for the lubrication of stationary gas engine cylinders.

Write our Lubricating Department for further information.

Joseph Dixon Crucible Company
Jersey City, N. J.

DIXON'S PAINT STAYS ON THE JOB

Of course, that's what all paints are supposed to do but Dixon's Silica-Graphite Paint does it.

Its vehicle is pure double-boiled linseed oil. We have always insisted on the highest grade and you get the benefit in service.

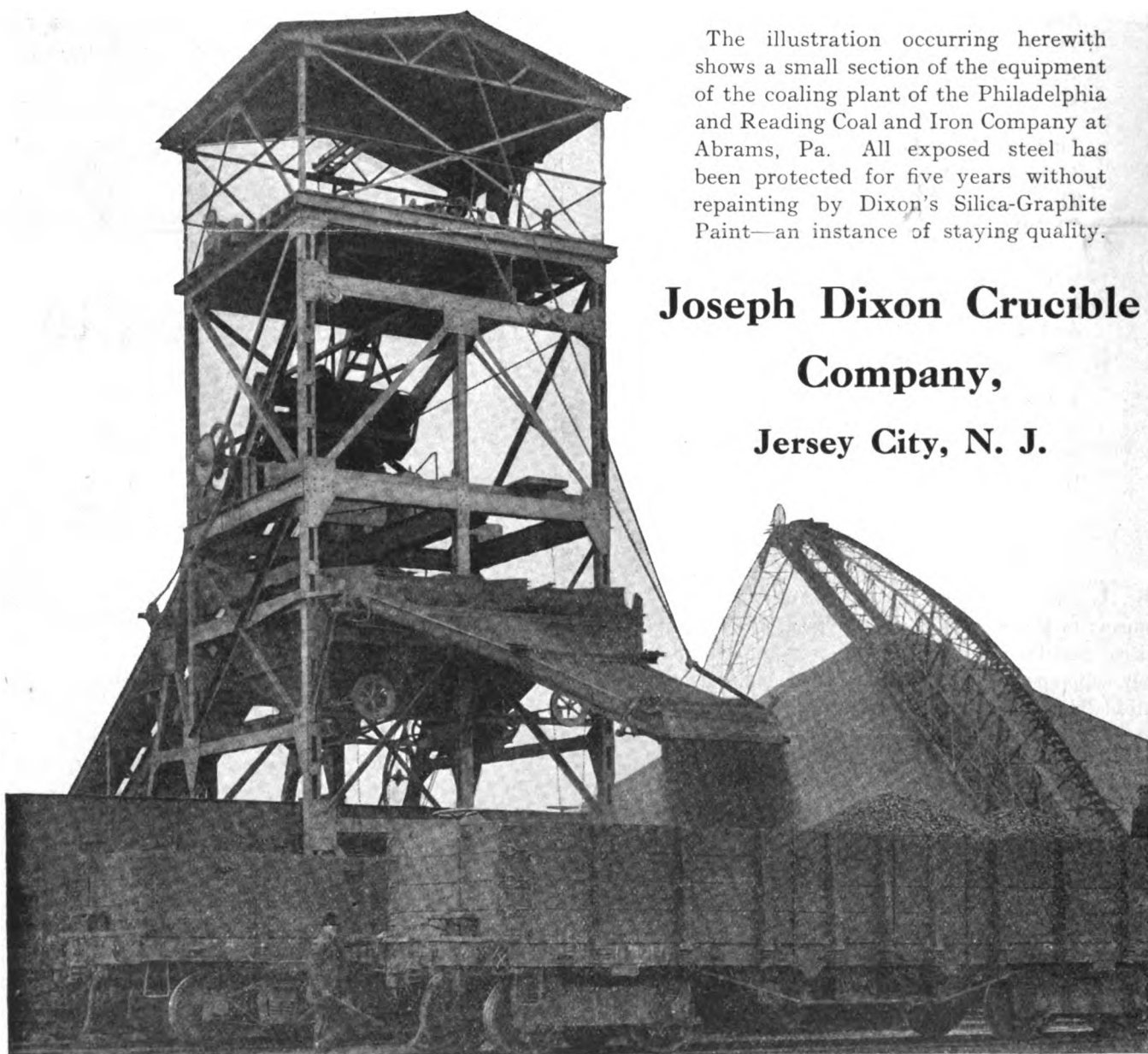
Its pigment is silica-graphite— inert, unaffected by heat or cold, acids or alkalies.

This is the original Dixon pigment supplied by the Dixon Ticonderoga Mines; it cannot be duplicated.

Dixon's Silica-Graphite Paint stays on the job because staying qualities are built into it. Its combination of vehicle and pigment is designed to supply a staying service.

The illustration occurring herewith shows a small section of the equipment of the coaling plant of the Philadelphia and Reading Coal and Iron Company at Abrams, Pa. All exposed steel has been protected for five years without repainting by Dixon's Silica-Graphite Paint—an instance of staying quality.

**Joseph Dixon Crucible
Company,
Jersey City, N. J.**



GRAPHITE

VOL. XIII.

MARCH, 1911.

No. 3.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

THE MAN—NOT HIS AGE

The Neighbor, one of the clever little magazines edited by David Gibson, contained some time back a very thoughtful article in which the Osler theory was reasonably opposed. We do not know that Doctor Osler may not have a scientific basis for his statement that forty-two is the age limit on creative work, but we do know so many exceptions to this rule as to lead us to conclude that, like most other human limits, it possesses considerable elasticity.

The practise followed by some railroads of employing no men over thirty is taken up in the article referred to, and the difference between the immense railroad organization and the average business pointed out. The railroad is likened to an army in which it is possible

to find almost any kind of ability and quality of brain. The force is so large that it provides for all contingencies arising within itself. In the average business, however, it is not possible to make the same restrictions on years, for the restriction on the number of employees is too great to permit this plan to be followed advantageously. The article pertinently points out in this connection that though the railroads may make a practise of accepting no new employees over thirty that the big vacancies on the road are filled by those who have matured and seasoned in the service—all over thirty.

If one will think back over his years, he cannot help but note how his viewpoint has changed. Take the boy, for instance, of from ten to fifteen. This is the Wild West—Diamond Dick period of his life. He has large quantities of superfluous energy (for play) and the height of his ambition is to be either a fine pitcher or a great detective. From fifteen to twenty he takes his pleasures as a whole in less strenuous form. This is apt to be his "first girl" period, and social gatherings, dances, etc., are his favorite pastimes. From twenty to thirty his pulse of pleasures beats constantly slower. In the early twenties this is not so noticeable, but in the later ones it may be observed that he is gradually becoming more sedate and can more frequently enjoy a pipe on the porch or at the club, or if married he does not find it difficult to stay at home and read the papers. The process continues from thirty to forty until, when he comes to middle age he may find it not only impossible to enjoy what in earlier life he considered

pleasures, but even becomes incapable of understanding how the younger ones do.

The moral of all this is that with our years and our experience our views change. The irascible bachelor of thirty-five wonders what possible source of pleasure the children find in shooting off noisy firecrackers, just as a youth of eighteen wonders how his father just past forty can read Gibbon's *Rome* when there is a dance that night at Highland Fling Hall. And so the business that has all fire-works will not have enough stability and balance to it. On the other hand, too much Gibbon's *Rome* would cause a business to suffer from lack of energy and enterprise, and so the best business combines both young and old, and gets the best from both while each serves as a check on the other's weaker points.

In individual cases, however, it's the man, not his age.

EXPLODING STOVE POLISH BURNS WOMAN TO DEATH

Victim Runs Through Street with Clothing in Flames

Terribly burned over her entire body when her clothing was ignited by an explosion of stove polish which she was using yesterday afternoon, Mrs. Anna Smith, fifty-seven years old, of 2329 North Twenty-first Street, died shortly after being admitted to the Women's Homeopathic Hospital.

Policeman McLaughlin, of the Twenty-sixth and York Streets station, also was burned while attempting to extinguish the woman's blazing garments after she ran through the street for nearly a block in search of aid.

The woman, the police say, was blacking the range when the polish ignited with a loud report, setting fire to her skirt.

After attempting to beat out the flames, Mrs. Smith rushed to the street. The wind fanned the blaze and before she had gone far she was a mass of fire. Policeman McLaughlin saw her and stripping off his coat, wrapped it around her and carried the woman, who had lost consciousness, to a drug store from which she was taken to the hospital, where she died.—*Philadelphia Inquirer*.

Our Philadelphia office sent us the above as another argument for Dixon's Stove Polish, which cannot explode and takes days even to burn off the stove.

THANK GOD every morning when you get up that you have something to do which must be done whether you like it or not. Being forced to work, and forced to do your best, will breed in you temperance, self-control, diligence, strength of will, content and a hundred virtues which the idle will never know.—KINGSLEY.



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
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NEW YORK SALESROOM, 68 Reade Street.
PHILADELPHIA SALESROOM, 1020 Arch Street.
SAN FRANCISCO SALESROOM, 145 Second Street.
CHICAGO OFFICE, 1324 Monadnock Block.
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PITTSBURG OFFICE, Wabash Terminal Building.
ST. LOUIS OFFICE, 501 Victoria Building.
WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
BALTIMORE OFFICE, 1005 Union Trust Building.
BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS,
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

THE PIPE OF PEACE

Just before Christmas that energetic manager of the 'Frisco office, Mr. A. C. Bowles, was presented by his staff with a very handsome meerschaum pipe and the following letter:

"As employees of the Dixon Crucible Company and being well versed in means and methods of reducing friction with graphite, and as it has for many years been the aim of the San Francisco office to reduce the friction on the Pacific Coast, which we are pleased to state has been done by our esteemed manager and co-worker, we wish to present to you this pipe as a token of our esteem and appreciation.

"Your trials and tribulations will be many, for the working of a bunch of hot air artists such as you have in your employ is indeed a difficult proposition.

"When worries and tribulations beset you, we ask that before you pass judgment, that you fill this pipe, that you smoke this pipe of peace and may your mind from its soothing influence become more peaceful and your spirit easy, and it will bring you a realization of the trials and tribulations of those who are doing their best to obey your orders.

"Your knowledge of the work that we are doing will tell you that it is not all highballs and big cigars.

"We trust you will realize that even though we are not always successful, that we are forever and ever doing our best.

"Amen.

"THE BOYS."

As Mr. Bowles is a descendant of King Rufus the Red, we congratulate the staff of the 'Frisco office on suggesting to him in such a nice way that he shall fill this pipe, light it, and wait its soothing influence before he passes judgment. Presumably this will be equivalent to counting 100 before he speaks.

It is very evident that the 'Frisco boys are diplomats; at the same time we congratulate Mr. Bowles on the kindly feeling of his staff and wish him much pleasure in the coloring of that meerschaum.

GEORGE BROOKS SCHOOL

PHILADELPHIA, PA., Jan 12, 1911.

Joseph Dixon Crucible Company,

Philadelphia, Pa.

GENTLEMEN:—I received the "de luxe" pencils, for which I thank you.

With one of them in my hand, I was inspired to write the following lines:

In graphite, cedar, varnish and glue
Dixon's Pencils are good and true.
They stand supreme in every test;
In all the world they are the best.
Again thanking you for the pencils, I am,
Yours respectfully,
(Signed) J. F. BYLER, Principal.

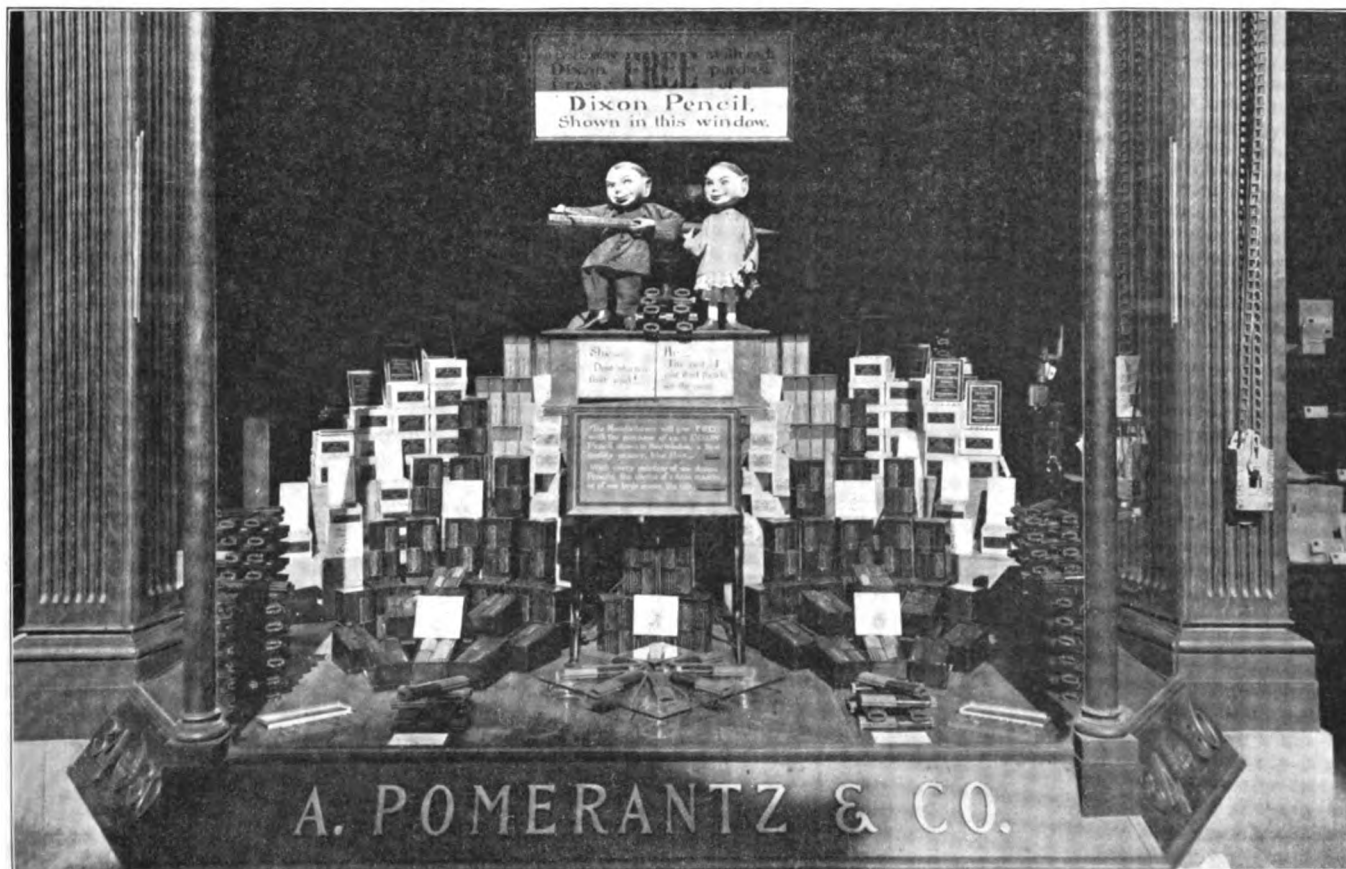
THE POOR

We all love the poor. It would be entirely unnecessary, if not positively caddish, to say that we hate the poor. But there are two kinds of poor; the individual poor and the collective poor. It is not the individual poor that we love; it is the collective poor. It is not the poor that we know and see, but the poor that we do not know and have neither time nor inclination to look at. We are afraid if we see them we shall cease to love them. We never say: "God bless the ice-man, or the coal-heaver, or the motorman." For them we find our execrations for not contributing to our comfort just so and so.

It is with great fervor, however, that we can say "God bless the poor," because the poor do not interfere with our comfort to the slightest degree.—*Life*.

"What distinguished foreigner assisted the colonies in the American Revolution?" asked an Ohio teacher.

"God," answered Tommy promptly.—*Everybody's*.



WINDOW DISPLAYS AND A CASE IN POINT

Window displays being simply one form of advertising, have as their prime object the sale of goods, and therefore, all window displays may be divided into two natural grand classes: those which don't "pull" and those which do "pull."

Here it may be remarked in a purely parenthetical way, that a pretty window display or even a highly "artistic" one is not necessarily a business getter. The artist who dresses a window may excite the admiration of the passers-by without at all inducing them to do anything more than merely pass by. Experience would indicate that in the ordinary individual what may be called, for want of a better phrase, the nerve-center of admiration, is located a good way from the nerve-center of "Spendicity!" The sort of a window display that "pulls" is the sort that first fixes the attention of the passer-by, and then literally coaxes him inside to buy. To do this takes infinite pains and strong commercial instinct.

Our Philadelphia Branch pins its faith to the sort of window display that "pulls." This is shown in the accompanying cut. It reproduces a display of Dixon's "American Graphite" Pencils in the huge bulk window of A. Pomerantz & Company's store, No. 34 South 15th Street, Philadelphia, Pa. The Dixon "Brownies"—now famous, yet eternally youthful—occupy the center of the display, and are ever the center of attraction. The boy "Brownie," apparently badly flustered, is industriously sharpening the wrong end of an "American Graphite" Pencil. The girl "Brownie"—modest, but with feminine insistency, coyly urges:

"Don't sharpen that end!"

To which the boy quickly responds,

"I'm not: I only want them to see the name!"

Anyhow, the girl, as is the wont of her sex, gets the last (and in this instance, the most important) word,

"That's right. The name 'Dixon's American Graphite' means *leads that never vary* and a pencil for every use."

The facial expressions and the motions of the "Brownies" are irresistibly comical and "fetching." Neat cards, placed here and there in the window, told the prices of the "American Graphite" by the dozen and by the single pencil. Packages and loose pencils, harmoniously arranged, showed the styles, finishes and grades and gave the necessary artistic touch to the exhibit.

Literally the window attracted crowds of people. A careful estimate, based on observation and count at different times of the day, showed that in ten hours not less than 4,000 persons stopped long enough to read the swinging signs and see the complete cycle of motions of the "Brownies." Many of them were induced to buy, then and there.

These "Brownies" were also displayed in the window of the Wm. Mann Company store at No. 522 Market Street, Philadelphia, though the general arrangement of the display was somewhat different. It met with just as enthusiastic a reception from the public. During the short time this display was in this window, more than 500 separate purchases were made of "American Graphite" Pencils.

THE freshman class in trigonometry was reciting.

"And have you proved this proposition?" asked the "math. prof."

"Well," said the freshman, "proved is rather a strong word, but I can say that I have rendered it highly probable."

—*Everybody's*.

GAS ENGINE LUBRICATION

The proper selection of the gas engine cylinder lubricant is not an easy one. One can determine what oils are best adapted only after careful tests. It should be one which has the proper lubricating qualities and when used in the cylinders will leave the least carbon deposit. Not all oils are suited for all engines; for instance, air-cooled cylinders, erroneously called oil-cooled cylinders, take a different oil than some water-cooled cylinders, and not all types take the same kind of oil. This is influenced by the distance of the lubricator from the engine, the design of the engine and the kind of lubricator used. In all cases, however, the viscosity (which is the rate of flow) and flash point should be medium and the oil should not feel as greasy to the touch as ordinary steam engine cylinder oil.

The temperature during the working stroke of gas engine cylinders has never been accurately determined, though it is generally accepted as being somewhere over three thousand degrees, so it is readily seen that a good gas engine lubricant should be one which will not burn at all or else burn up entirely, leaving the least carbon deposit behind.

When gas engine cylinders are overlubricated, this is usually noticed by a very smoky exhaust. However, it is always better not to scrimp too close in the amount of oil used.

The question of properly introducing the lubricant to the cylinders is taken care of by designers, the users having only to see that instructions are carefully carried out. The oil has also another function to perform, other than preventing cutting or seizing and that is forming an oil seal between the piston and the cylinders, thereby making better compression. The writer once had this fact brought forcibly to his attention. For some unknown reason (and when a gas engine won't start, it is usually this reason, as sometimes they won't go at all and then apparently seem to start off all right), the engine refused to start. After giving it several turns, we inspected the firing pins, fuel supply, valves, etc., and tried again and it seemed as though the engine never turned easier (even when the pet cock was open). We finally noticed that the oil cup on top of the cylinder was closed. We opened this and tried once more; this time everything was all right.

Flake graphite, when used with oils as a gas engine cylinder lubricant, increases the engine's efficiency very perceptibly. The function of thin flake graphite is to form a veneer-like coating over the metallic surfaces, filling up all microscopic irregularities which are known to exist, and if for any reason the oil supply should temporarily fail, there can be no seizing of the parts.

The beneficial effects of flake graphite (the thin powdered flakes) as a gas engine cylinder lubricant, have long been recognized and approved by scientific and practical men. It has been found by actual test that compression is increased from two to four pounds, the temperature of the exhaust gases very much reduced, showing more heat available for actual work and smoother running generally without changing the test conditions at all. The best means of introducing the graphite is by putting some right into the crank case where splash lubrication is employed, using it in the proportions of a teaspoonful to a pint of oil.

By some it is recommended that the graphite be used in a

force feed lubricator. This is not good practise, for if the engine should stand idle for some time, the small pipes might become clogged up. Graphite may be introduced to the cylinders by means of an ordinary bug gun, which can be purchased at any drug store, by removing the spark plug and blowing the graphite into the cylinders.

It is a good practise to rub flake graphite into all rubbing surfaces if the engine is ever dismantled.

Many manufacturers are not finishing the cylinder walls and piston as smooth as they once thought necessary, but before assembling rub flake graphite thoroughly into the metal.

All bearings and moving parts should be looked to, to see if they are properly lubricated. Where grease cups are attached, they should be adjusted so that the feed is just right. Feed only enough so that there is a grease collar formed on the shaft. Perhaps here it might not be out of place to point out some of the advantages of grease as a lubricant. In the first place, it is much more economical than oil; second, it is cleaner and there is not so much danger from fire; third, as stated before, grease forms a collar on the shaft and prevents dirt and grit from working into the bearings; fourth, it doesn't need so much attention.

A MONOPOLY IN ZINC DUST

The Dixon representative, Mr. E. A. St. John, writing from Denver, advises that the United States Zinc Company of Pueblo and the Denver Fire Clay Company of Denver, have established a monopoly of the zinc dust manufacturing industry in the United States and now bid fair to drive the German product from the market in this country. The German product is the only competitor known.

The establishing of the industry mentioned, means the bringing into Denver annually the sum of about \$300,000, with the probability that the business will be largely increased soon.

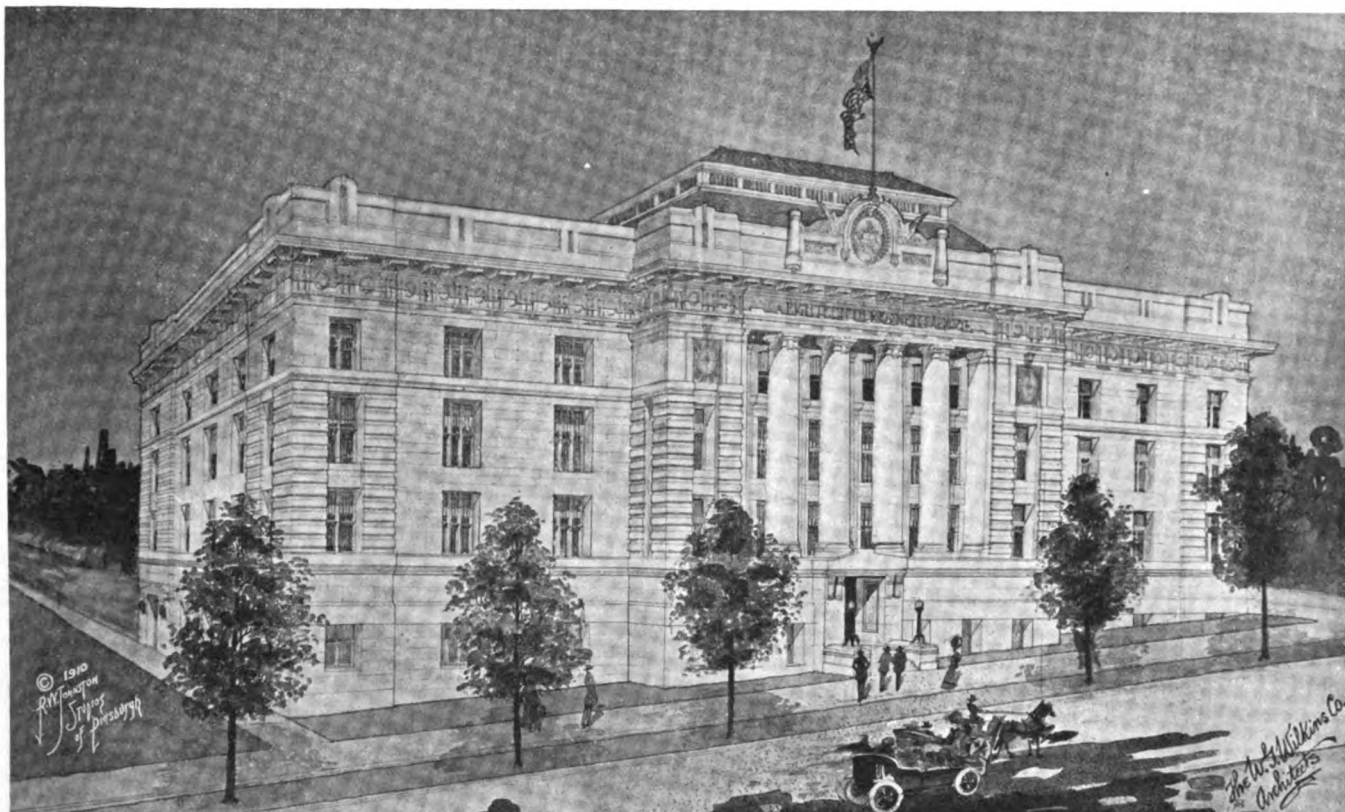
Zinc dust is a most essential ingredient in the reduction of gold ores by the cyanide process. Every reduction plant using cyanidation must have it, and this process is becoming increasingly popular, especially in the handling of low grade ores. Mining has resolved itself into a business of getting the money out of the mountains of low grade ores that abound in Colorado and other Western states, in contra-distinction to the old-time method of looking only for high-grade or "smelting" ores.

The moving spirit and the active force of the companies mentioned above, is Mr. W. W. Case, Jr., who has large interests in Colorado and in Mexico.

HOW ARE YOUR NERVES?

The above heading is used by the Baker Importing Company in one of their advertisements. It gives a test as follows: Hold a pencil (Editor's Note: Dixon's preferred) an inch above a dot and see if you can put its point down quickly and exactly on the dot. Inability to do this is a sure sign of a nervous and overwrought condition.

DIXON's graphite publications sent free upon request.



ADMINISTRATION BUILDING
18th Regiment Armory at Pittsburg, Pa.

The above view shows the handsome Administration Building recently completed for the 18th Regiment Armory of Pittsburg, Pa. Besides being a very attractive structure, as is readily seen from the above view, it is modern in every way and does credit to the Pennsylvania National Guard.

Joseph F. Kuntz, of the W. G. Wilkins Company of Pittsburg, prepared the plans and specifications for the structure; Thomas Reilley was the general contractor; The American Bridge Company were the steel contractors; and John L. Mullen, the erector. We are glad to be able to say that Dixon's Silica-Graphite Paint was specified and used on the superstructure of this building.

Dixon's Paint now plays an important part in the maintenance of the National Guard, since it protects the steel work of a number of armories in New York City and other parts of the country.

THE NEIGHBORHOOD CLUB

A "Neighborhood Club" has been organized in Jersey City. It is composed of men, women and children, all interested in making their neighborhood better by their own efforts.

The Neighborhood Club does not call upon the city for funds. The idea is just this: instead of having persons throw refuse into the street, for instance, every member of the Neighborhood Club is supposed to refrain from doing so and to urge upon his neighbor not to do so.

Instead of sweeping dirt, dust and other refuse into the gutters, members are expected themselves to place the rubbish into receptacles, thereby preventing the spreading of disease germs to some extent, and taking the refuse out of the district to the dumping grounds.

Owners of property, members of the Neighborhood Club, are expected to keep their sidewalks clean and neat; to keep the vestibules of their houses clean; the windows, the steps and everything possible as clean and neat and tidy as they can.

Each neighbor is to vie with the other to have the best looking place.

Other Neighborhood Clubs will be organized, and these Neighborhood Clubs will try to make Jersey City the cleanest city in the United States.

WANTS MORE OF DIXON'S MOTOR LUBRICANTS

A. L. GOULD

AUTOMOBILES AND AUTOMOBILE SUPPLIES

MOBILE, ALA., Nov. 19, 1910.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—I have been using your Graphite Cup Grease for some time and prefer it to anything on the market; would ask that you enter order and send by first freight, viz:

72	One pound packages	Dixon's Graphite Cup Grease.
20	Five pound	" " " " "
12	Ten pound	" " " " "
36	One pound	" " Motor Flake Graphite.

Hoping you will make prompt shipment care of Mallory S. S. Co., and oblige, I am,

Very truly yours,

(Signed) A. L. GOULD.

"Say, Pop, what's a pessimist?"

"A pessimist, my son, is one who, of two evils, chooses them both."—*Everybody's*.

OVERHAULING A CAR

Before placing a car in commission for the season, it will pay the owner or driver to make a careful inspection of every detail. Great care should be exercised in thoroughly examining the car before being assembled, to make sure that every part is in perfect order.

Particular attention should be given to the steering and braking devices, for the safety with which a car may be driven at a given speed depends entirely upon the braking power.

He should see that every bolt that he may be obliged to remove is removable. The threads of all bolts should be smeared with Dixon's Motor Graphite mixed in oil to a paste-like consistency. This mixture should also be applied to the spark plug thread.

The seats of inlet and exhaust valves should be polished with Dixon's Motor Graphite. This precaution largely prevents burning and pitting, and obviates leaking and loss of compression.

All the old oil and the dirt should be removed from the crank case, and new oil added with Dixon's Motor Graphite—using a teaspoonful of the graphite to every quart of oil. Use mineral oil only.

Sprinkle Dixon's Motor Graphite on the inside of the tire shoe. It will prevent the inner tube from sticking and is better than chalk or soapstone.

Paint the rims with a mixture of flake graphite and quick drying shellac varnish of about the consistency of thick cream and the rims will not become rusted.

If the springs squeak, introduce some flake graphite between the leaves. This prevents rusting and stops squeaks.

See that cotter pins are in their places; if they are rubbed with graphite they will not rust and can be easily removed.

Do not use oils or greases on transmission chains, they will gather dust and dirt. It is better to polish them with Dixon's Motor Graphite, which is dry, or better yet, treat with Dixon's Motor Chain Compound. Then dust and dirt will not stick and the chains will run better and wear less.

Fill your gear case with a Dixon graphite lubricant. If you will write and tell the Dixon Company what machine you use, they will advise as to what lubricant is best adapted to your car.

All ground joints should be treated with a mixture of Dixon's Motor Graphite and oil, or better with the specially prepared Graphite Pipe-Joint Compound. Then, if for any reason it is necessary to break the connection, it can be easily done without danger of taking part of the joint with it.

Before assembling the parts of a dismounted engine, rub Dixon's Motor Graphite thoroughly into the surfaces of the pistons and cylinders. This will result in smooth running, good compression, and improved lubrication. The effect will endure for some time.

Pack all bearings, gear cases, wheel bearings, etc., that are designed for grease lubrication, with a Dixon Flake Graphite Grease. You will then obtain the advantage of a high-grade plain mineral grease plus the additional benefit of the flake graphite. The Joseph Dixon Crucible Company prepare graphite greases that are specially compounded for automobile use, and are carefully selected for the work required of them. They are of a wide range of consistencies, and have been found to give most excellent satisfaction.

By the use of flake graphite lubricants friction losses are reduced, more power is available and smoother running is obtained. Try them and see.

GOODS FOR MEXICO

U. S. Consul Señor Samuel E. Magill, Guadalajara, advises that the trade of Mexico is worth making every effort to secure and when once secured is worth while keeping. "The surest way to retain trade once secured is to export the best."

The wonderful reputation held by Collins & Company of Hartford, Conn., for superior quality of machetes and other tools during three quarters of a century, is due to the fact that they always export the best. Foreign factories have made cheaper articles, imitating everything about Collins' goods even to the mark "Kollins & Co.," but being of an inferior quality the competition soon became of no consequence.

As the Mexican tariff is almost entirely specific, a good article pays no more duty than an inferior one of the same class. It costs no more import duty to export the best.

The best salesman should be sent to look after the Mexican trade,—the most polite and courteous man on the staff, and he should be intrusted to become personally as close and friendly to the Mexican merchant as possible, to know him in his club as well as in his store, and it will take a courteous gentleman to do it, but the best work he can do and the trade he may establish will be largely nullified if the best be not exported to fill his orders.

INCREASED USE OF DIXON'S FLAKE GRAPHITE

The men who have made a careful study of lubricants and who are connected with steam railroads and automobile companies as experts on the subject of proper lubrication, have very plainly shown what they think of Dixon's Ticonderoga Flake Graphite and the graphite lubricants of which Dixon's Flake Graphite, either regular flake or finely powdered flake, form the basis.

During 1910 the Joseph Dixon Crucible Company supplied graphite and graphite lubricants to 210 different steam railroad companies. Its business with the steam railroads increased 53%. During 1910 the Joseph Dixon Crucible Company sold graphite or graphite lubricants to ninety-one automobile manufacturers and increased its business with them 260%.

Dixon's Flake Graphite, regular flake and finely powdered flake, and Dixon's Graphite Lubricants are in every way looked upon as standard and without an equal.

UNDESIRABLE CITIZENS

An American who spends much of his time in England tells of a cockney who went to a dealer in dogs and thus described what he wanted:

"Hi wants a kind of dog about so 'igh an' so long. Hit's a kind of gr'y'ound, an' yet it ain't a gr'y'ound, because 'is type is shorter nor any o' these 'ere gr'y'ounds, an' 'is nose is shorter, an' 'e ain't so slim round the body. But still 'e's a kind o' gr'y'ound. Do you keep such dogs?"

"We do not," said the dog man. "We drown 'em."

—*Harper's Weekly.*

MACHINE MOULDING VS. HAND MOULDING

By JOHN ALEXANDER, Philadelphia

Part I

It is a well-known fact and has been proved by all kinds of demonstrations, that as the world progresses and increases in its population, there is a larger demand for all kinds of goods and materials that go into the manufacture of all of those goods that are consumed. Now, in order to keep up with this great demand, something has had to be done, so as the arts and sciences have advanced, machinery has been invented through the ingenuity of man to help and accomplish this. If we turn to any trade or profession and look for a moment, we are bound to see that this has been so.

Time will only permit me to cite but a very few instances. Let us go back to the days of James Watt and his steam engine, Stephenson and his locomotive, and think of the wonderful improvements that have been achieved during the years up to this time; think of Edison, the number of years he labored in order to bring about the benefits of electricity, and how it is being applied in the present day in all lines of mechanics, not losing sight of the enormous amount of good we derive from it in our foundries, when we think of having had to work with torch lights and old hand cranes; think of Bell and his telephone, Morse and his telegraph, and how in the course of time it has been improved upon by Marconi; Howe with his sewing machine and think of the blast furnaces with their wonderful improvements, not forgetting John Fritz. These few illustrations and hundreds more, prove to us the advancement in modern civilization and how machinery has played a most important part.

Now, in the foundry, in order to keep up with this advanced stage, we have resorted to a number of appliances that have brought forth more production. This has been accomplished principally of late by the moulding machine; but for a number of years, foundry-men had paid little attention to this advancement, for, as far back as fifty-one years, we have an instance of them using a double squeezer in making railroad chairs and bells for railroads that were laid through the African deserts. Then again, forty-six years ago, we read of a machine being invented for making gear wheels, hand methods not being considered accurate enough; five years later (1869) a patent was granted on a jarring machine, and from that time the general progress on moulding machines had been very slow until about ten years ago, when the still increasing demands called for a greater production. It put a new impetus in the moulding machine, which has been the means of producing many machines for a greater range of work. Since this advancement has taken place, moulders in general have looked upon it as being a step towards the destroying of their trade. Hence, the machine has been recognized with suspicion and antagonism. Whether this has been caused by the great glowing advertisements, agents or salesmen going around the country giving the bosses "gold bricks" in the shape of telling them how much can be accomplished on the machine with unskilled help (or moulders if you want to), instead of giving a fair or reasonable idea of what might be done, or leaving it to the integrity, push and knowledge the foreman or proprietor has of his own foundry conditions. This I leave you to judge for yourselves. At any rate, I might say

here the moulding machine is only in its infancy, and I believe that if moulders had been taught in the beginning how machines were going to take most of the laborious work off them (the moulders), to look after the art, machines would have been further advanced today than they are, because the real art of moulding will never reach the high standard unless everything pertaining to it is thoroughly understood, if it ever will be. Namely, some of those features that the majority of skilled and unskilled help don't seem to try, or to thoroughly realize in general, are the machine, kinds and qualities of sands, and where and how they should be used; mixtures of facings, where and how to apply them; to nail and where to secure sand pockets; to rod and where to gagger or vent if necessary and how to make partings; how to finish, cut gates, anchor cores if necessary, clamp and pour off, and to temper and cut up heaps to suit varieties of work.

Now—the time has come when moulders are scarce and they feel aggrieved to work on a machine, and a great many object to doing so, though not all, so that the only alternative that foundrymen have in order to keep up with the previous mentioned demands is to resort to the moulding machine, classify his work as much as possible, and get suitable machines, and use unskilled help (or moulders), and instruct them on this specialized work as much as we possibly can. (This same thing has had to be accomplished in almost every line of trade, why not ours?)

(*Comparisons.*) I will now try to make a few comparisons of machine moulding vs. hand moulding. Take a plain power rammer; this type of machine, as its name implies, simply rams the mould, the pattern being drawn by hand with the assistance of a vibrator attached to the frame or plate on which the patterns are mounted, and "v" pins, acting as a guide, which insures the pattern being drawn on a straight line. At a certain brass foundry in Syracuse, N. Y., the operator on this kind of a machine (a moulder) was making 195 moulds, 10" x 19" x 5" cope, and 4" drag in eight hours; by hand methods the best he could do, using the same pattern board or frame, and all other conditions equal, was 121 moulds in eight hours and castings were not as uniform or satisfactory as those made on a machine,—percent of bad about equal. Again, at a malleable iron foundry in York, Pa., a man, on this same kind of machine, was turning out 185 moulds, 12" x 14" x 4" cope x 4" drag in seven hours, while the best that could be done by hand ramming was ninety in eight hours, all other conditions being equal.

THE SPLIT PATTERN MACHINE POWER RAMMING AND POWER DRAFT

These machines are especially suited to standard duplicate work, such as brass or iron valves, fittings, brake shoes, shaft hangers and boxes and so on, and can be easily operated by skilled or unskilled help. At a foundry in York, Pa., a man was turning out on this machine from 100 to 118—14" x 16" x 4½" cope x 4½" drag, in seven hours; he shoveled and riddled his own sand, set cores and handled all moulds himself, but got some help to pour off and shake out; the same man on his best days hand moulding was sixty-five moulds—other conditions the same. Then, at a certain foundry within ten miles of Philadelphia, there were two men making from 186 to 201 moulds, 14" x 16", which contained two brake shoes,

in 8½ hours, pouring them and closing them, but, as the machine was kept working steadily, a separate gang were pouring them off in the afternoon. Hand moulding on this job I am sorry I wasn't able to get, but I guess most of us can think of the comparison.

SQUEEZER MACHINES

Those machines which ram and vibrate the moulds are commonly designated as "squeezers." After the operator has filled the flask with sand, he rams or presses the sand into position, this is generally accomplished by a side lever, which is operated by the workman, all other operations being performed as in hand moulding. I may say that I have seen 244 moulds, 10" x 19" x 6", made in 8½ hours and under the same conditions, but no machine, the best that could be done was 139 moulds in 8½ hours,—operator in both cases had his sand heap cut up for him, all ready for starting to mould at seven o'clock. One of the great advantages the operator on the machine had was that the machine followed the sand heap, doing away with the heavy carrying out of flasks to the end of the floor, thus enabling him to pour off easily, as he wasn't so tired, while in working by the hand method he was scarcely able to pour off his 139 moulds.

STRIPPING PLATE MACHINES

Some of these machines both ram and draw the pattern, either by hand, air or fluid pressure, while some draw the pattern down through the stripping plate, this operation being done by the movement of a lever on the side of the machine; for accuracy of castings and amount of work, it cannot be half duplicated by hand methods.

BLOW RAMMING MACHINES

At a certain foundry, within three miles of this building, I saw this class of machines in operation, each being handled by one moulder and two helpers, and the castings they had made were as on all machines, very creditable. They were such as cone pulleys, small lathe heads, parts for drill presses and slotting machines, brackets, small pedestals and so on, and they were having such unprecedented success that they told me they could never go back again to hand methods, as it cost too much to make these castings the old way, as well as the extra finishing in the machine shop.

(To be Continued)

TWO MORE USES FOR DIXON'S GRAPHITE ABOUT THE RAILROAD

We have a very nice letter from E. W. Burgis, Master Mechanic of the New Orleans, Fort Jackson & Grand Isle R. R., in which he suggests two little "stunts" with Dixon's Flake Graphite that he has applied to work under his control. We quote from the letter:

"In fitting new air brake hose with signal and brake-pipe couplings and nipples, the inner tube, that vulnerable and delicate part of the hose, will be less liable to injury if the ends of the coupling and nipple be first dipped into a can of Dixon's No. 635 Fine Flake Graphite, and a little of the same graphite be swabbed, dry, into the inside of the hose at both ends. Many thousands of air brake hose are fitted up every week—how many inner tubes are more or less damaged by the forcible

thrusting in of the attachments would be hard to estimate, especially since the adoption of the new standards of heavy hose. Certainly some of the injury would be avoided if dry, fine flake graphite were properly used to lubricate these parts and I may state that this use of graphite is not attended by any trouble in the way of couplings pulling out of the hose, when clamps are properly applied.

"It sometimes happens, when repairing pressure gauges, both steam and air, that there is noticed a certain amount of sluggishness in the motion of the delicate moving parts. Lubrication of these parts with ordinary grease or oil is out of the question and they are usually made of dissimilar metals, such as bronze, or German silver and steel, to guard against corrosion and lessen friction. When repairing or calibrating pressure gauges, the main spindle, hair-spring, rack and pinion, connecting pins and links and all moving parts may be lubricated by being brushed with a camel's hair pencil dipped into a little dry No. 635 graphite, and if this be done it will be found that the action will be much improved—the pointer will respond more quickly and accurately to any change of pressure and also that the adjustment will be more lasting and reliable."

"COULD YOU THINK OTHERWISE?"

H. A. FRASSE

Purchasing Agent of the Brooklyn Edison Co.

Little flakes of graphite,
Placed where they should be
Save wear and lubrication
To which all must agree.

Those little flakes of graphite,
If placed with judgment right,
Will save a lot of cussing,
And make all bearings tight.

In using Dixon's Graphite,
In flake, or made of paste,
All friction, wear and trouble
Do disappear in haste.

Readers may remember a little verse in GRAPHITE which ran as follows:

Little flakes of graphite
Scattered here and there,
On a bearing surface,
Save all wear and tear.

This was seen by Mr. Frasse and inspired the clever little poem which appears above. The sentiment which Mr. Frasse sends us combines truth and poetry in fitting couplet.

IN THE recent New York examinations for chauffeurs' licenses was this perfectly civil question:

"If you were going along the road and met a skittish horse, what would you do?"

To which one candidate replied—our authority saw the examination paper:

"I would stop the car, then the engine, and then, if the horse was still skittish, I would take the machine apart and hide it in the grass until he got safely by."—*Everybody's*.

DIXON'S GRAPHITE AXLE GREASE

We are reminded of this product of the Dixon Company by a very nice order just received from Mexico.

Dixon's Graphite Axle Grease has been on the market for at least forty years. It has never been extensively advertised—in fact has been chiefly advertised by "its loving friends."

As its name implies, it is a graphite grease. The foundation on which it is built and the foundation on which it has successfully stood these forty years, is Dixon's Ticonderoga Flake Graphite.



When an axle gets nicely and thoroughly coated with the soft, smooth, unctuous flake graphite, then there is no need to worry about that dread of all drivers—"hot boxes."

This axle grease is known as "Everlasting" axle grease and some of the testimonials we have received would indicate it is well named. No driver who has ever made use of Dixon's Graphite Axle Grease and tested it thoroughly will ever consent to discontinue its use.

"PRACTICAL ALLOYING"

The Penton Publishing Company, Cleveland, Ohio, have published a book under the title of "Practical Alloying," a compendium of alloys and processes for brass founders, metal workers and engineers. The book is edited by John F. Buchanan, author of "Brass Founders' Alloys and Foundry Nomenclature."

In his preface Mr. Buchanan says:

"The progress made in the production of alloys within the last two decades has been phenomenal. There is no end to the invention of new alloys, and the number of variations in the composition of alloys that have long ago passed the experimental stages, is simply overwhelming. Out of the multitudinous mixtures advocated and employed in the practical and constructive arts, it is no easy matter to select, or even to classify, the metals of importance.

"The 'battle of the bronzes' has been going on for at least thirty years, and the honors have fallen to phosphor bronze, aluminum bronze and manganese bronze at different periods. In other branches of the metal industry similar progress is being recorded. New alloys are being introduced or new additions are being made to old alloys, and new records are being made in alloy practise. It is needless to add that new difficulties are also presenting themselves and these are the things that make effort worth while.

"This book professes to be no more than a handy guide to the practical alloys and processes. The bulk of the matter originally appeared in *The Foundry* and other trade magazines, and judging by the number of inquiries addressed to me on many of the subjects treated, the reappearance of the articles in book form should be hailed with interest."

THE TRUE STORY OF A KICKER

From the Lewistown (Me.) Journal

There lived two frogs, so I've been told,
In a quiet wayside pool;
And one of these frogs was a blamed bright frog,
But the other frog was a fool.

Now, a farmer with a big milk can
Was wont to pass that way;
And he used to stop and add a drop
Of the aqua pure, they say.

And it chanced one morn in the early dawn
When the farmer's sight was dim,
He scooped these frogs in the water he dipped—
Which was a joke on him.

The fool frog sank in the swashing tank
As the farmer bumped to town,
But the smart frog flew like a tugboat screw,
And he swore he'd not go down.

So he kicked and splashed and he slammed and thrashed,
And he kept on top through all;
And he churned that milk in first-class shape
In a great big butter ball.

Now, when the milkman got to town
And opened the can, there lay
The fool frog drowned; but hale and sound,
The kicker, he hopped away.

MORAL

Don't fret your life with needless strife,
You let this teaching stick,
You'll find, old man, in the world's big can
It sometimes pays to kick.

—HOLMAN F. DAY.

THE PROVIDER

Senator "Bob" Taylor, of Tennessee, tells a story of how, when he was "Fiddling Bob," governor of that State, an old negress came to him and said:

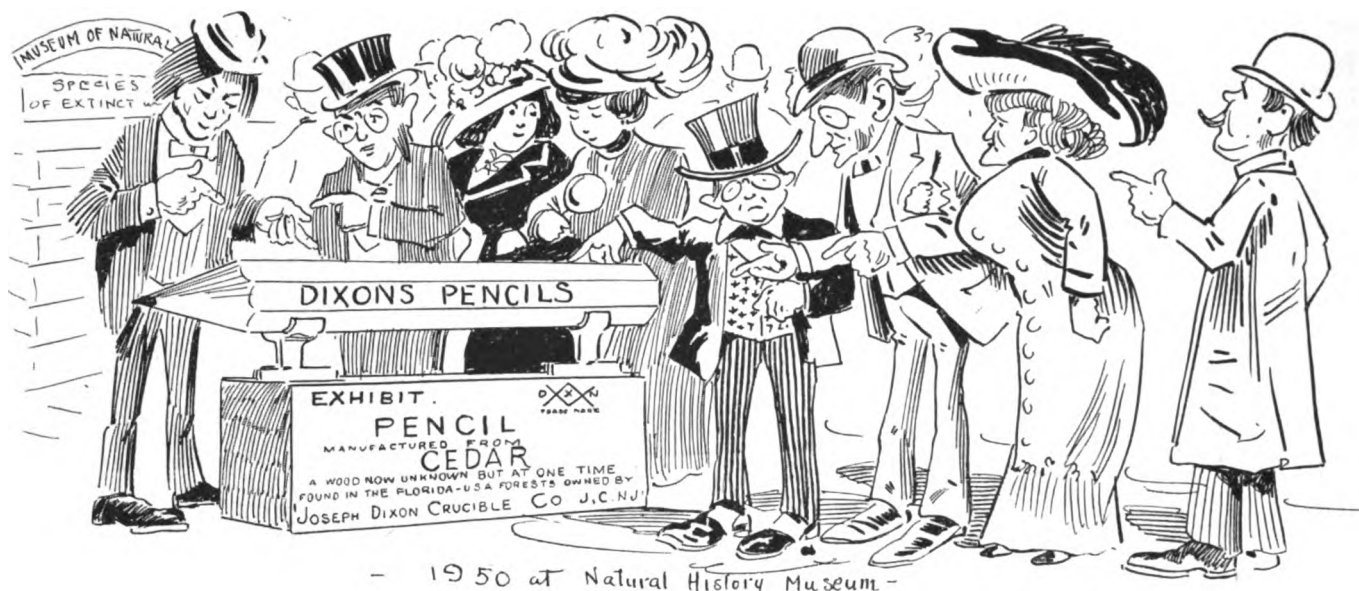
"Massa Gov'na, we's mighty po' this winter, and Ah wish you would pardon mah old man. He is a fiddler same as you is, and he's in the pen'tentry."

"What was he put in for?" asked the governor.

"Stead of workin' fo' it that good-fo' nothin' nigger done stole some bacon."

"If he is good for nothing what do you want him back for?"

"Well, yo' see, we's all out of bacon ag'in," said the old negress innocently.—*Cosmopolitan*.



- 1950 at Natural History Museum -

The above clever cartoon was drawn by Grant Wright of New York City, and was inspired by the following item clipped from the *New York Journal*:

"Within twenty years the cedar for the manufacture of lead pencils will be exhausted. This is the prediction made by an expert of the largest pencil making firm in the world. Fifty per cent of the total supply now comes from the Southern states. The cedar of Alaska is not fitted for pencils and unless the demand decreases the pencil of the future will be made of celluloid or metal with free leads. The firm in question saw the danger of exhausting the cedar twenty-five years ago and planted large tracts in Germany, but it will be years before these are available.

"The present outlook is that fifty years from now we shall see wooden pencils only in museums."

LUBRICANTS USED WHEN MACHINING VARIOUS MATERIALS

By S. J. KELLEY

Cast iron is usually worked dry as in olden times, but I have found that when hard cast-iron gears are to be cut, say with three cutters, the first cut through will work better with strong soda water. Of course, it makes an objectionable mess, but the work will be done faster and the cutters keep sharp longer than with the dry process of cutting.

Brass and babbitt are usually cut dry, but to hand-ream brass and babbitt is sometimes a difficult task if the reamer is a little dull. Coal oil and turpentine are used with good results and one man can do the work of two with ease. Cast iron can be hand-reamed easily with tallow and graphite, mixed, and the whole will be kept just the size of the reamer. Copper can be worked well with lard oil and turpentine mixed.

—*American Machinist*.

CAPACITY OF THE HORSE

Endurance is the horse's weakest point. Ten hours a day is often assumed as his working period. Authorities claim that eight hours is better, or that six under a heavier load will accomplish the same volume of work with less tear and wear

on the horse. The average farm horse cannot be depended upon for more than thirteen to fifteen miles of pull a day, nor more than four to six hours of work per day, as an average of even the busiest months. Properly handled, working about six hours a day, well and carefully fed, a horse may have a working life of ten years of 1,000 hours each. The average farm horse will do well to develop 500 horsepower hours per year, or 5,000 in ten years. About twenty per cent of the horse's weight may be taken as his maximum sustained draft and six to eight miles per hour his maximum sustained speed for anything more than an hour or so per day. The draft horse ordinarily gives the largest volume of work per day at about one-half his maximum load, and one-third his maximum speed.—*Compressed Air Magazine*.

DIXON'S GRAPHITE ON ROLLER BEARINGS

TROY, N. Y., Dec. 8, 1910.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—As President and Superintending Engineer of the Troy Roller Bearing Company, I have to inform you that we have tried your graphite in our roller bearings and we cannot speak too highly of your product. One user writes: "After sixteen months use of your roller bearing, we find no perceptible wear or tear and the graphite that was put in the bearing was still in the casing and no other graphite had been added in the sixteen months, I therefore have decided to fit up my whole factory with these bearings."

This testimonial is very welcome to me because I can now make sure of the desired lubricant to recommend to my clients.

You can make whatever use you like of this information.

Yours truly,

(Signed) WM. J. BREWER.

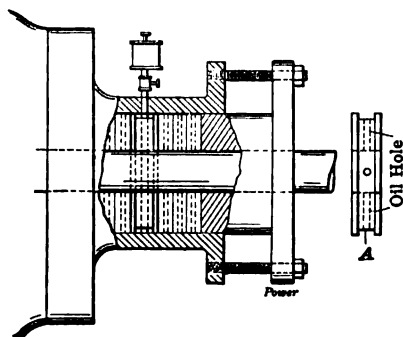
The graphite referred to in the above letter is Dixon's Motor Graphite, which we have always recommended as being invaluable as a lubricant for delicate mechanisms such as roller and ball bearings.

It is perfectly consistent that the hair of a successful man should come out on top, just the way he did.

LUBRICATING PISTON PACKING

Here is a method of lubricating piston packing. A metal ring is made with a $\frac{1}{4}$ inch channel cut on the outside edge, as shown at A. Oil holes are drilled radially through the channel so that oil and graphite may find their way from the oil cup to the piston rod.

The method of applying the ring is as follows: First, two rings of regular packing are inserted in the stuffing box. Then



the brass ring, which is made in two sections, is put in place, followed by as much more ring packing as is necessary to fill the stuffing box.

The hole for the oil cup connection must be drilled so as to come close to the inner edge of the groove in the metal ring when the packing is new. This will allow considerable compression of the packing rings before the groove of the ring has been forced past the oil-inlet hole in the stuffing box. The valve placed below the oil cup makes it possible to feed the oil and graphite at will. —Power.

EDUCATION

The Schools and Colleges Present Opportunities Only

Harry Pratt Judson, president of the University of Chicago, had in the *New York Times* sometime ago, an article on education well worth careful reading and of which we can give but a few extracts:

Education, we have held, is the first necessity of a free people, and is the right of every child. Many a family has lived with close economy in order that the children might be educated, and many a father has felt that if he could give his sons and daughters the benefit of good schools he would do better for them than to leave them a fortune.

A democracy is unfit for political power if not intelligent. An individual is better equipped for the struggle of life if he is trained for it.

Ignorance and incompetence are foredoomed to failure. The alert mind stored with knowledge has a fair chance for success. Education, then, is the imperative need of a democratic society, and is a powerful aid to the energies of youth.

But, after all, there is no magic in mere education. Education in itself is not an active agency which will produce results merely by its own innate efficacy.

The education offered by school and college is merely an opportunity. The school does not say, "Come here and let me educate you." It says rather, "Come here and obtain an education, if you will."

Books, laboratories, teachers, are so many means which the youth may use or not—which he may use so as to get all they have to offer, or only so as to get a bare minimum of benefit.

The social life of school or college may have educational value, but if unwisely managed may bring more harm than good.

The forms and conditions of education and their relation to society are constantly changing. We have no right to assume that what has once been tested and found good, will be permanent. We should be constantly on the watch to "try all things, prove all things."

Nothing is too good for American education, and if anywhere in the world something is done better than we do it, we should know and we should promptly adopt whatever is worth while.

The standards of school work are too low. The tendency is to do the minimum amount of work which will permit one to stay in school.

We should make the minimum so much higher that only those who are really doing serious things can get the benefit of what our schools cost the public.

It is not fair to use the money provided by taxation or by the beneficence of the generous to provide a life of interesting leisure for the indolent.

Too many boys and girls are in school who might much better be actively engaged in the shop, the counting house or the home.

Those who do not care to avail themselves of the opportunities provided, should not have those opportunities forced upon them.

Too much education is aimless. Much educational folly goes by the name of culture. The aim should be to definitely fit themselves to be efficient in some particular thing. Too many who have passed through our public schools or colleges are incompetent; what they know they do not know accurately and they cannot apply their knowledge.

Three things, at least, we should expect as the result of education, whether of school or of college—intelligence, efficiency, integrity.

"Knowledge is power" is a trite maxim, but it is true. There is a vast difference between one who knows and one who does not know; between a community which is intelligent and one which is ignorant.

The most valuable knowledge does not consist in having at command a great mass of facts, so much as in knowing how to get facts when needed.

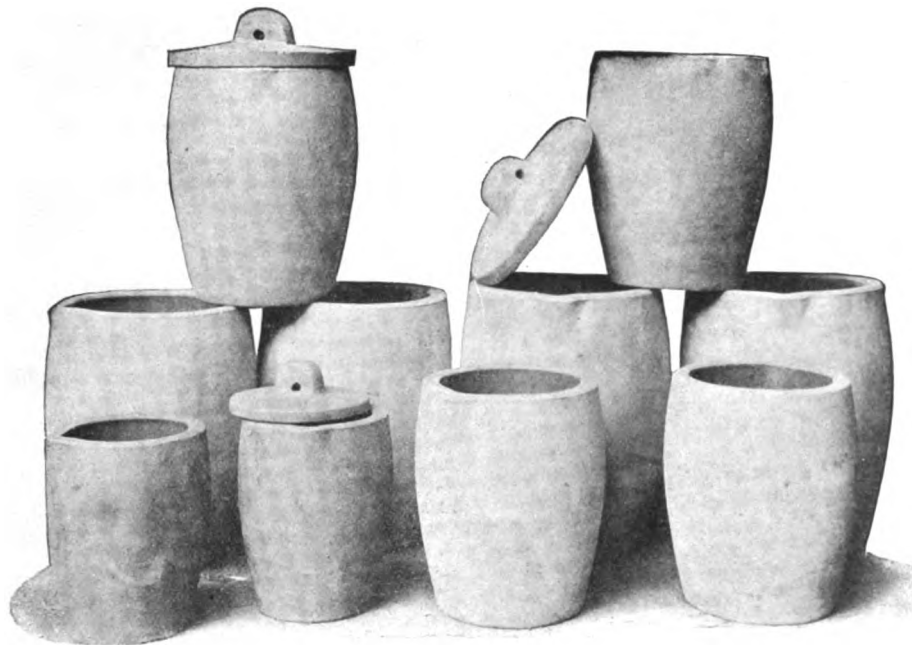
Intelligence implies not only knowledge, but also good judgment in its use.

Efficiency in the application of knowledge, facility for doing things accurately, is one of the choice fruits of a sound education.

A marksman does not become skilled merely by being shown the technique of rifle practise, nor can one become a golf player by learning the theory of play. Each must practise, practise, practise. The piano and the violin one can learn to use well only in like manner. The same principles precisely apply to any branch of knowledge. Our schools need in all education to take a leaf from the experience of musicians and athletes.

But no education is worth while without integrity, and in business and in public affairs there is no more vital need than that of absolute honesty. What is not obtained fairly, one has no business to have at all.

DIXON'S graphite publications sent free upon request.



The Dixon Standard of Crucible Quality

The Dixon standard was established in 1827, when Joseph Dixon, the inventor of the graphite crucible and founder of the Dixon Company, began the manufacture of the Dixon Crucible.

The Dixon standard demands that the very best crucible graphite be exclusively used and that it be combined in the latest and most approved manner so as to withstand modern crucible uses.

The Dixon standard, as a result, supplies the user of Dixon's Crucibles with a reliable and long service. If you are not using Dixon's Crucibles, you are giving your competitor just that much possible advantage over you.

Joseph Dixon Crucible Company,
Jersey City, N. J.

GRAPHITE

VOL. XIII.

APRIL, 1911.

No. 4.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

THE USES OF PUBLICITY

Sometime ago there appeared in certain New York papers a statement inserted by the Pennsylvania Railroad Company. That great system's employees had demanded higher wages—the company said it could not allow them. The men threatened to strike. Then it was that the railroad appealed to all the people, stating the men's side and its own.

A great telephone trust having more imagination or more sense than some other great trusts, decides that when John Smith calls up John Brown and is discourteously answered, John Smith is going to become angry at the telephone company as well as at John Brown, who alone is responsible and to blame. So the telephone trust spends thousands of dollars, and spends them

wisely, in pointing out through scores of metropolitan newspapers that people who use telephones should be courteous and prompt and considerate of others.

Out in Arizona a sheriff is bothered by tramps. Hoboes infest the town but it were inhumane to force them back into the desert. So the sheriff has a few thousand posters printed and puts them up miles and miles away, along all the railroads coming into his bailiwick. The posters simply say: "Hoboes, the taxpayers of Yuma will not feed you. If you enter the town you will have to go into the chain-gang. Sixty and ninety day sentences are the rule." And the tramps stay away.

Over in France certain scoundrels concoct vile liquors that make people crazy and criminal. The people drink them because they do not know how vile they are. So the government simply prints posters saying that such-and-such brands made by so-and-so are not fit to drink, that certain poisons have been found in them. And the people steer clear of the brands.

The United States government finds it difficult to get young men to man the warships. So the government has a little book written and illustrated, showing how sailors spend their time, what they can see in foreign ports, how much money they can earn and save. And the government buys space in magazines to tell about the booklet and to get young men to send for it. Thousands do—and the entrancing descriptions send the young men to the recruiting office to enlist.

The common housefly is responsible for thousands of deaths and hundreds of thousands of sick people every summer in this country. A few earnest people resolve to do what they can to abate the ignorance of the people. So the bill-boards blossom forth with huge posters and the magazines carry page advertisements, and boards of health put out placards warning all the people and telling them how to keep out flies and how to get rid of them. Thousands of lives are saved and millions of dollars.

So you see, publicity is everywhere fighting for mankind. Publicity is warning and advising, pleading and urging, defending and attacking a thousand and one things—and becoming the mightiest engine ever placed before mankind.

—*The Silent Partner.*

"FACTS AND THINGS"

The above is the title of a bright little four page publication by the students in the Mechanical Department of Girard College—the memorial which perpetuates the name and memory of the great Philadelphia merchant, Stephen Girard.

It is a good title and one to be considered. "Facts" are effects produced or results achieved—things actually existent, whether they be objects, events, conditions or relations, and whether material or mental. "Facts" should not be permitted to escape us and we should not accept statements unless they are demonstrated to be "facts."

As to "things," we should not accept them as they seem but as they are, for "things" are not always what they seem to be.

TREATMENT OF WHEEL RIMS

Another preventive of rust on wheel rims which is highly recommended, is to paint them with a mixture of shellac and finely pulverized flake graphite, mixed to a stiff paste. After treating the rims as indicated, it will be found that they are very even and a waterproof film of great smoothness is formed.

—*Automobile Dealer and Repairer.*

THE BIGGEST TRUST

An exchange says that the biggest Trust on earth is the country newspaper. It trusts everybody, gets cussed for trusting, mistrusted for cussing, and if it busts for trusting, gets cussed for busting. There is but one way to bust this trust—pay your subscription.—*Tombstone Epitaph.*

DIXON'S graphite publications sent free upon request.



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS,
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

THAT SPRING IS HERE AGAIN

is shown by the return of the poets to the magazines; the birds to the woods; the artists to their easels in the field, and the master workman to inspect his steel work after its contest with a hard winter. Our song of protective paint, now over forty-five years old, is newer than ever, because proven truer each year. Listen to us; we have something important to say:

There is no paint better suited or more economical. Economy is the watch-word of the day in the maintenance of large plants. Therefore the long service records of our paint will interest you.

Seven years ago, one of the four largest railroads of the West painted a viaduct with Dixon's Silica-Graphite Paint and the great structure has not required a protective coating since.

DIXON'S SILICA-GRAPHITE PAINT is manufactured in ONE QUALITY only, FOUR COLORS, and ONLY PURE DOUBLE-BOILED LINSEED OIL is used as the vehicle.

Its component of Ticonderoga Flake Graphite, alone mined by the Dixon Company, affords elasticity to heat and cold and resists the attacks of rust, acids and gases. Its other component, silica, affords tenacity and resists abrasion.

This makes a perfect paint for railroad use on steel cars, bridges, signal pipes, etc.; street railway companies use it on viaducts, trucks, trolley poles, etc.; cement companies use it on boiler fronts, smokestacks, etc.; breweries on ammonia pipes, tanks, etc. It is largely used on grain elevators, cemetery fences, ornamental iron work, doors, fire escapes, exterior and interior of water tanks and all exposed iron and wooden surfaces.

We would like to send you our folder "Colors and Specifications."

Please write and mention your possible requirements as an old or new customer of ours, *this spring*.

YOQUIVO DEVELOPMENT COMPANY

CHIHUAHUA, MEXICO, Nov. 10, 1910.

Joseph Dixon Crucible Company,

Jersey City, N. J.

DEAR SIRs:—We placed with you sometime ago an order for eight graphite retorts to be sent monthly. We now write to cancel this order until you hear from us further and request that it take place at once.

We are glad to state that we are now enabled to get eighteen melts of cyanide precipitate from one of these retorts instead of eight as at first, and for this reason are cancelling the order for a time.

Yours very truly,

YOQUIVO DEVELOPMENT COMPANY.

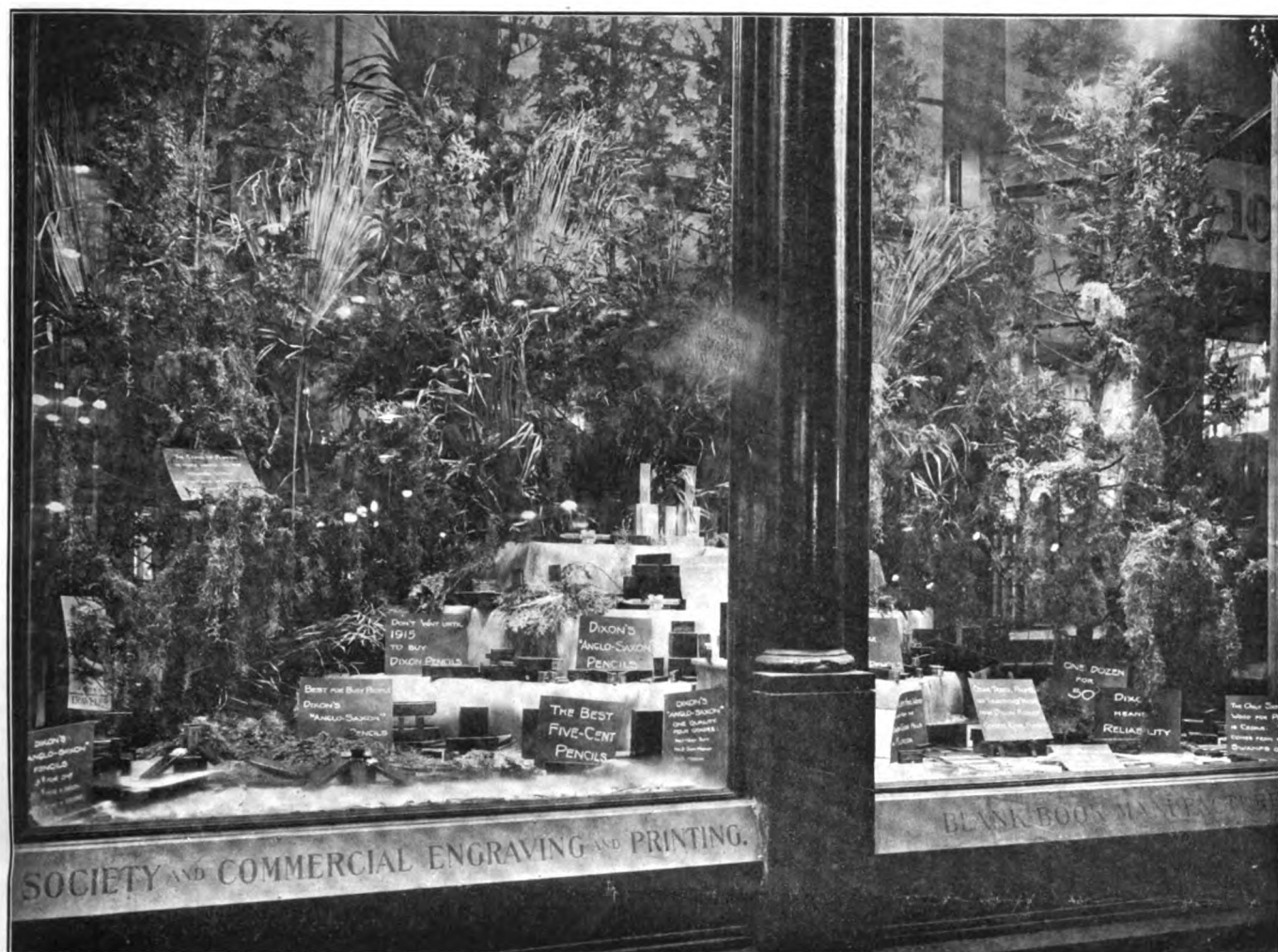
MORE ABOUT MEXICAN TRADE

U. S. Consul Alonzo B. Garrett, New Laredo, Mexico, writes that manufacturers should carefully weigh the matter before giving any one firm the exclusive sales of their goods in the entire Republic.

It would be better policy to send a thoroughly competent representative to solicit trade in all the principal cities of the Republic and in case an exclusive right of a territory is given to a firm in Mexico City, it should not cover territory north of San Luis de Potosi, as merchants north of that city cannot purchase American made goods in Mexico City and compete with goods which are purchased even from jobbers in the United States.

It is also well to remember that the merchant on the Mexican side of the Rio Grande, in the border cities, is in closer touch with his people and has better facilities for the extension of trade than his competitor on the American side of the river, and if the American manufacturer desires to increase his trade in Mexico, he should be willing to quote the same prices to the Mexican merchant as to his competitor on the American side when same quantities are purchased.

DIXON's graphite publications sent free upon request.



ATTRACTIVE PENCIL WINDOW

Picturesque Display of Dixon's Anglo-Saxon Pencils in a Prominent Boston Store

The accompanying illustration gives some idea of the unique display of Dixon's Anglo-Saxon Pencils in the large show windows of Hooper, Lewis & Company, well-known stationers in Boston.

Attractively arranged in the background, is a forest of cedar trees, palms and moss from Florida, where the Joseph Dixon Crucible Company has several thousand acres of the finest pencil wood in the world.

The many shades of green, so beautiful in nature, are relieved by the soft gray colors of the moss. In the foreground are hundreds of Dixon's Anglo-Saxon Pencils attractively arranged. In perfect harmony with the color scheme are numerous white and green signs giving interesting information regarding Dixon's Lead Pencils.

Following out their plan so successfully carried on during 1910, Dixon's Boston office will conduct this year a new series of window displays throughout the New England District.

Thousands have admired this display which is pronounced one of the finest ever shown in the New England States.

THE SARGASSO SEA

A lake within an ocean, fed by great ocean rivers, is something out of ordinary thought.

The Sargasso Sea, says *Harper's Weekly*, is a great ellipse more than one thousand miles east and west and two thousand north and south.

It is like a vast lake in the centre of the Atlantic Ocean and it owes its existence to the great ocean rivers that encircle it. Its shores, however, are ever moving waters instead of stable land. It is like the calm centre of an immense whirlpool. The far off deep sea currents that sweep around its circumference do not disturb the stagnant waters within its boundaries.

The weed covered waters are forever placid except at rare intervals, when some vagrant storm swoops down from the heavens and ruffles their surface. The atmosphere above is usually as calm as the seas below.

The lengthened description of this wonderful sea, which appeared in *Harper's Weekly*, affords most interesting and fascinating reading.

Motor Cycling recommends that the coaster hub on a motor cycle should be packed with a graphite composition. Dixon's Graphitoleo is highly recommended by motor cyclists.

Examination of the hub should be made every 250 miles, as the heat of summer, or very fast riding, or hard work in a hilly country, develops heat which melts the composition and permits it to run from the bearings.

"Now then, men," cried the gallant captain, "fight like heroes till your powder is done, then run for your lives. I'm a little lame, so I'll start now."—*Wasp*.

JUDGING THE SPEED OF A TRAIN

In a recent issue of the *Railroad Man's Magazine*, there appeared an interesting little article by E. A. Spears under the above heading. The writer goes on to describe conditions which lead to the over-estimation or under-estimation of the speed at which an engine is traveling.

One of the most deceiving signs is stated to be the exhausts. There are four exhausts to every revolution of the wheels. If the engine is one of those with big driving wheels the speed is likely to be greater than estimated, since the exhausts will not follow each other so closely as they do on the engine with smaller driving wheels going at anything like the same pace.

An old rickety engine or a rough road bed, either of which jounce the engineer about excessively, give an impression of higher speed than is actually the case. A head-on wind tends to the over-estimation of speed, also a cab that is low to the ground, because the closer one is to a moving object the faster it appears to move. (Of course the train does the moving but the effect on the eye is that the earth is moving).

All the conditions which tend to lead the engineer to over-estimate the speed, when reversed result in underrating it. The mileposts and your watch are stated as being the only infallible guides.

TRANSMISSION TOWERS

Bay Counties Power Company, San Francisco, Cal.

We show on this page two towers belonging to the Bay Counties Power Company, San Francisco, California, that were first painted with Dixon's Silica-Graphite Paint in 1903,



These towers were erected for the purpose of carrying high tension wires, and the topography of the land as well as the intervention of navigable tide-water made it necessary that towers be unusually large and strong as shown by the cuts. The main tower, for instance, is 225 feet high and has a base of sixty-eight by ninety feet. The leaning tower is a rather unique and unusual type.

We have often stated that Dixon's Silica-Graphite Paint has made time records in all sections of the country—this is an example sent us by the Dixon San Francisco Office.

EXPLAINS HIS GOODNESS

"I understand that you never taste liquor."

"No, I am thankful to say that I have always been abstemious."

"Do you ever use tobacco?"

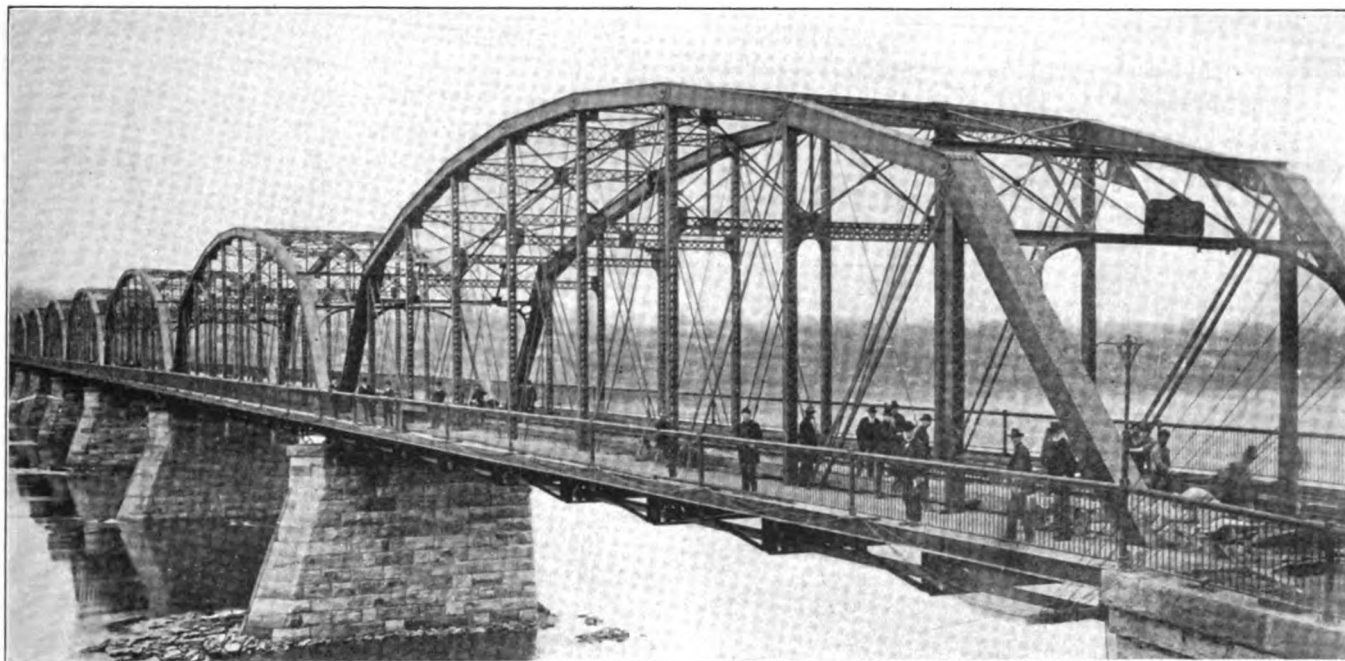
"Never in any form."

"You have always been strictly moral in every way, I suppose?"

"Absolutely."

"Say, tell me one thing. Have you been good because you found it satisfying to be so, or because you hoped to be rewarded for your goodness?"

"In the first place, I was good because I wanted to marry my employer's daughter, and after I got her I had to be good to hold my job."—*Chicago Record-Herald*.



STATE BRIDGE AT DANVILLE, PA.

We are glad to be able to illustrate again the above structure which made its first appearance in *GRAPHITE* in September, 1905. At that time the bridge had just nicely been completed and painted with Dixon's Silica-Graphite Paint. The County Commissioners were so well satisfied with the service provided by Dixon's Paint they again specified it for repainting, which was done last fall.

As will be readily seen from the picture, the Danville bridge is quite a good size structure and represents a worthy piece of engineering work. The repainting was done under R. A. Simmons, contracting painter of Pottsville, Pa.

A REVOLUTIONARY PUZZLE

These odd rhymes were written in the early part of the Revolutionary War—about 1776. If read as written they are a tribute to the king and his army—but if read downward on either side of the comma, they indicate an unmistakable spirit of rebellion to both king and parliament. The author is unknown.

"Hark, hark, the trumpet sounds, the din of war's alarms
O'er seas and solid grounds, doth call us all to arms,
Who for King George doth stand, their honors soon shall
shine,

Their ruin is at hand, who with the Congress join.
The Acts of Parliament, in them I much delight.
I hate their cursed intent, who for the Congress fight.
The Tories of the day, they are my daily toast,
They soon will sneak away, who independence boast,
Who non-resistant hold, they have my hand and heart,
May they for slaves be sold, who act the Whiggish part.
On Mansfield, North and Bute, may daily blessings pour;
Confusion and dispute, on Congress evermore,
To North and British lords, may honors still be done;
I wish a block and cord, to General Washington."

—*National Magazine.*

DIXON'S graphite publications sent free upon request.

THE ENDURING CRUCIBLE

Dixon's Crucibles have the reputation of long life and endurance; therefore, long life and endurance are no new virtues with Dixon's Crucibles to which we desire to call attention.



Yet, occasionally a Dixon Crucible gives an exceptional example of long life and endurance, which is most interesting as it shows what can be done with a Dixon Crucible if properly and skillfully handled.

The illustration is of a No. 150 Dixon Crucible which endured the strain, exposure and handling for three score and ten heats in an oil furnace.

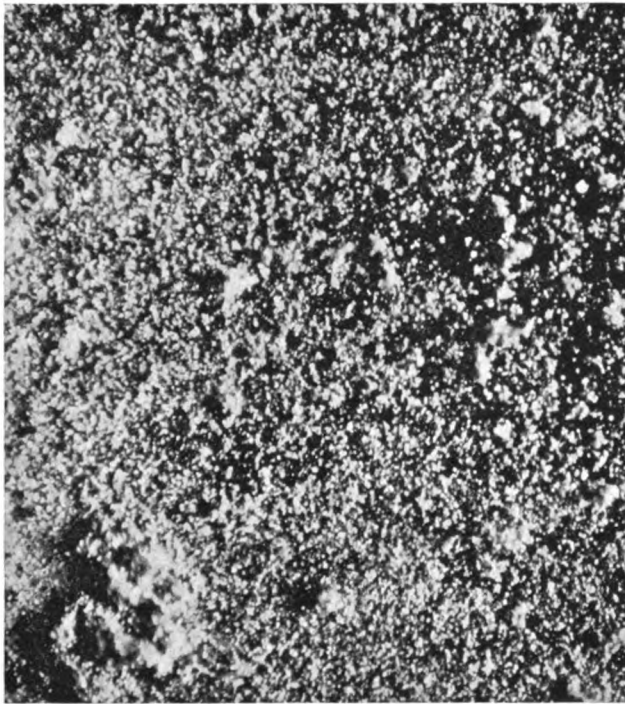
The superintendent of the plant where this crucible was used, asked us to omit name and place as he wished to avoid the controversy and annoyance, which he was sure would come.

Suffice to say that crucibles of other makes were used at the same time and under like conditions in every way, and the best record that could be gotten from any pot of another make was forty-one heats.

THE United States, it is said, is by far the greatest meat-eating and wool-wearing country in the world.

WHY AMORPHOUS GRAPHITE BALLS UP

We have said repeatedly that one of the many reasons why we cannot recommend the use of amorphous graphite in any form as a lubricant, is because of its tendency to "ball up." This we have seen many times in practise when it was used and have printed many communications from prominent



AMORPHOUS GRAPHITE

engineers along this line. One is prone, however, to ask the "why," and this is explained by referring to the accompanying photo-micrographs.



FLAKE GRAPHITE

Amorphous graphite is one whose structural parts are irregular in shape and because they are without definite form, the surfaces of the small particles that break off from the original mass must necessarily be rough, and whenever rough surfaces are brought in contact there is a tendency for them to stick together.

By referring to the accompanying photo-micrograph of amorphous graphite, it may be readily seen that it is practically impossible to spread amorphous graphite out in a thin, even layer, since the particles tend to adhere or mass together, as shown in the picture. This massing together is but a start of the building-up or balling-up process that always takes place when amorphous graphite is used as a lubricant and is especially pronounced in the presence of water or oil.

On the other hand, the photo-micrograph of flake graphite has a smooth, even appearance and its slipperiness seems to stand out in the picture. It needs no argument to convince one that the flat, smooth surface could not be built upon as in the case of the amorphous variety, but that the thin flakes slide over one another so as to form a continuous layer of graphite composed of extremely thin, overlapping flakes. The overlapping of the flakes knits the graphite veneer together and is one of the causes of this form of lubrication being so durable. It stands to reason that there can be no great durability to amorphous graphite composed of frail particles scattered in bunches over the bearing surfaces. These pictures show clearly how graphite in its two forms behaves upon a metal surface.

PAINT! PAINT!! PAINT!!!

The springtime sun beams on the town;

What trees there are wave branches green;

One overcoat to sixteen men

Out on the crowded street is seen;

But though these harbingers of spring

Are truthful, there's a pungent taint

In all the air that cinches things—

It's due to signs thus lettered:

PAINT!

The metal fence that guards the flat

Was dull when Smith strode forth today;

When he returns this eve from toil

'Twill make a glittering display

And as he holds his wild applause

With difficulty in restraint,

He'll see a big sign posted there

To warn the casual passer:

PAINT!

The streets are filled with little ones,

With noisy barrel organs, too,

And femininity hangs forth

From windows, taking in the view;

And though all these be city signs

Of spring, they're only vague and faint

Compared to those fresh lettered cards

All over town, announcing:

PAINT!

—CHARLES R. BARNES, in *New York Sun*.

OIL VS. GRAPHITE IN BOILERS

Flake Graphite on Metal Surfaces Makes Scale Removal Easy

Every one who is familiar with the operation of steam boilers, knows of the never ending fight against scale and corrosion and of the various preventives in common use, such as preheating the feed water, chemical treatment of the water both inside and outside the boiler, filtration, blowing off, introduction of zinc in boiler and other palliative measures.

The effect of scale in the boiler ordinarily is to reduce both its steam-generating capacity and its economy, since scale is not a good conductor of heat, and therefore it diminishes the transmission of heat through the boiler plates. Scale is also highly dangerous, as whenever it accumulates to any great extent at a part of the shell which is exposed to the flame or to very hot gases, the plates frequently become overheated and weaken so as to "bag," crack and cause an explosion.

EFFECT OF OIL

Among other impurities found in the boiler feed-water in plants where condensed steam is used, is oil from the engine exhaust. The action of oil in the boiler is to saponify with alkalies present in the feed water, depositing lime-soap, iron-soap, etc., upon the boiler plates. Such a soapy deposit, due to its soft nature, readily collects and holds all scale-forming substances and oil with which it comes in contact, so that a building-up process of heat resisting material will occur. Scale is normally deposited in largest quantities at parts not subjected to the greatest heat, since it is thrown up from the hottest parts by the ebullition of the water and naturally settles on the parts over which the agitation or current of the water is least, but when scale forming material comes in contact with a soft, greasy mass at the bottom of the shell, whether at the hottest or coolest parts, it cannot be easily displaced by any agitation of the water because it is held tenaciously to the metal by the oil or grease. In time a thick scale will form even over the hottest parts and trouble is sure to result. Perhaps the worst feature of oil is that it is a very poor conductor of heat. An authority says, "Roughly speaking, a film of lubricant one one-hundredth of an inch thick, a layer of scale one tenth of an inch thick and a steam boiler plate ten inches thick, offer equal resistance to the passage of heat." It is therefore easily understood why oil is so dangerous in boilers. Oil retards the passage of heat through the plates and scale is deposited at parts where the heat transfer is least, which explains why formation is most rapid on parts coated with oil or grease.

In most of the larger power plants today great care is taken to remove all traces of oil from the feed water before it enters the boiler, but it is found to be practically impossible to entirely remove it and at least small quantities of oil will get into the boiler if condensed exhaust is used as boiler feed-water. The only exception is where oil is not used for cylinder lubrication.

GRAPHITE AS A LUBRICANT

The only complete remedy for oil in boilers when condensed steam is used, seems to be to use no oil in the engine cylinders. In stationary engine practise it is in many cases not possible to entirely eliminate the use of oil for cylinder lubrication, but it may be reduced to a great extent by using Dixon's Flake Graphite in conjunction with the oil supply. Dixon's

Flake Graphite (truly called the perfect lubricant) builds up on the rough metal surfaces of the cylinder walls and valves, a tough, slick, veneer-like coating of the greatest smoothness and, when properly used, friction losses are reduced to a minimum with the best of regulation and highest efficiency.

In marine service it is customary to use no oil but to depend upon flake graphite and the water of condensation to furnish the required cylinder lubrication. Water of condensation alone does not have sufficient viscosity to keep the metal surfaces apart and consequently friction losses and wear are excessive.

When Dixon's Flake Graphite is used as a lubricant, oil may in many cases be entirely done away with, for as pointed out above, the graphite reduces the friction to a minimum and consequently less fluid lubricant is required. The water of condensation will insure an even distribution of the graphite over the bearing surfaces. Unlike oil, graphite is not affected by temperature variations and for this reason its use becomes imperative at the highest degrees of superheat.

It is a mistake to use too much graphite. It is a peculiarity of flake graphite to adhere to metal surfaces with wonderful persistency, so that after a coating of graphite has once been formed it is necessary to supply only enough graphite to keep the coating intact. Only small quantities of graphite are required from time to time, though a better method is to feed a very small amount continually in order to have a more uniform distribution of the small flakes over the rubbing parts.

FLAKE GRAPHITE IN BOILERS

Some of the graphite will undoubtedly be carried along with the exhaust steam from the cylinder in the same manner as oil, and a very small quantity may pass the separators and eventually reach the boiler. If so, its presence in the boiler would be beneficial rather than harmful.

Graphite of the Dixon flake variety is a good conductor of heat and its effect on metal surfaces so far as heat transfer is concerned is practically nil. No harmful chemical action can result from its presence, because, practically speaking, graphite is inert. Because of its characteristic of adhering to metal surfaces, it forms a smooth, unctuous coating over the whole interior of the boiler below the water line, so that it is impossible for scale to stick firmly to the metal. If it were not for the protective coating of graphite, the scale would become firmly attached upon the metal and would be very difficult to remove, as many have learned from experience. Also the small quantities of graphite constantly being deposited along with the scale, become thoroughly intermixed with it and cause the scale to be soft and easily crumbled.

In many plants troubled with hard scale, it is the custom each time the boiler is cleaned to either thoroughly rub flake graphite into all the water surfaces of the shell and tubes, or to put several pounds of graphite in the water and allow it to settle on the surfaces. Much less scale will adhere to parts coated with flake graphite and the scale that does form may be more easily removed than from uncoated surfaces. It is obvious, of course, that it is useless to treat a boiler that is not clean with graphite, for unless the graphite can come in direct contact with the metal, the purpose of its use is defeated.

If such beneficial results follow the voluntary use of flake graphite in boilers, it is quite evident that only good results

can come from what small quantities may get to the boiler from the engine. And, since everyone knows what a menace the presence of oil in the feed water is to the safety of the boiler, Dixon's Flake Graphite is fast coming into general use as a cylinder lubricant. There are now in the market devices for injecting dry graphite into steam cylinders and steam pipes; lubricator cups are also designed so oil can be fed by flowing through graphite contained in the cup. To those who are interested, we will be glad to send full information.

We do not claim that all graphite would be a good thing in the boiler, for some graphite, particularly of the amorphous variety, has a tendency to pack or to roll up into pasty balls, especially in the presence of water and oil. Amorphous graphite, too, is more difficult to separate from the steam than flake graphite, and therefore an undesirable quantity could get over into the boiler.

The foregoing shows that flake graphite should be used as much as possible as a steam engine lubricant, especially when condensed exhaust is utilized as boiler feed. Dixon's Flake Graphite is clearly superior to oil, first from the standpoint of lubrication, and second because beneficial rather than harmful results obtain in case some of the lubricant is carried to the boiler.

PASSING IT ALONG

We are glad to be able to reproduce a clever little item which originated with Mr. W. A. Steckel, Roadmaster of the Beebe System of Trolley Roads. This appeared originally in *Trolley Talk*, and in addition to its humor, exhibits a keen insight into things as they are. It will be appreciated by many of us who, in some capacity or other, have been through a similar experience.

THE LOW JOINT WAS RAISED

The president and party were on a tour of inspection, and were sidetracked for a belated train. They were trying to get some exercise by walking the rails, when the president discovered something. He called to the Chief Engineer and told him there was a joint that looked a little low. The C. E. called the General Roadmaster, saying, "that joint is quite low and you had better see to it." The G. R. called to the Assistant G. R. M. and said, "that joint is very low, have it attended to at once, and report to me when it is done." The Assistant G. R. M. called to the General Foreman saying: "Tim, there is a d— bad low joint down there—can't you see it? Git that raised d— quick and don't be long about it ayther." The G. F. saw the Section Gang near and he shouted to Pat: "Pat, git that jint up quicker than h—l, before that next train comes." Pat called to Jimmy, who was working his second week on the section: "Jimmy, d— your sowl, git your claw bar and hist up that low jint. Why in — did you let it git down like that?"

The low joint was raised.

COLOSSAL

"I want a few colored illustrations of beats and tomotoes."

"Life size?" inquired the artist.

"Catalog size," replied the seedman with a significant smile.

—*Louisville Courier-Journal*.

DAVID HIS OWN GRANDFATHER

From time to time we like to be told how David became his own grandfather. This is how it happened.

There was a widow (Anne) and her daughter (Jane), and a man George and his son (Henry). The widow married the son, and the daughter married the father. The widow was therefore mother (in law) to her husband's father, and grandmother to her own husband. By this husband she had a son (David), to whom she was also great-grandmother. Now, the son of a great-grandmother must be grandfather or grand-uncle to the person to whom his mother was great-grandmother; but Anne was great-grandmother to him (David), therefore David is his own grandfather.

BALL BEARINGS of all kinds, but specially the small ball bearings on motor cycles, are most effectively treated by placing a small quantity of Dixon's Finely Powdered Motor Graphite in the hollow of the hand and the balls then rubbed in the graphite one at a time, with the palm of the other hand. This is an ideal treatment for those who do not believe in using any oil or grease in ball bearings.

This treatment is equally excellent for the large balls and rollers used in the ball and roller bearings on automobiles.



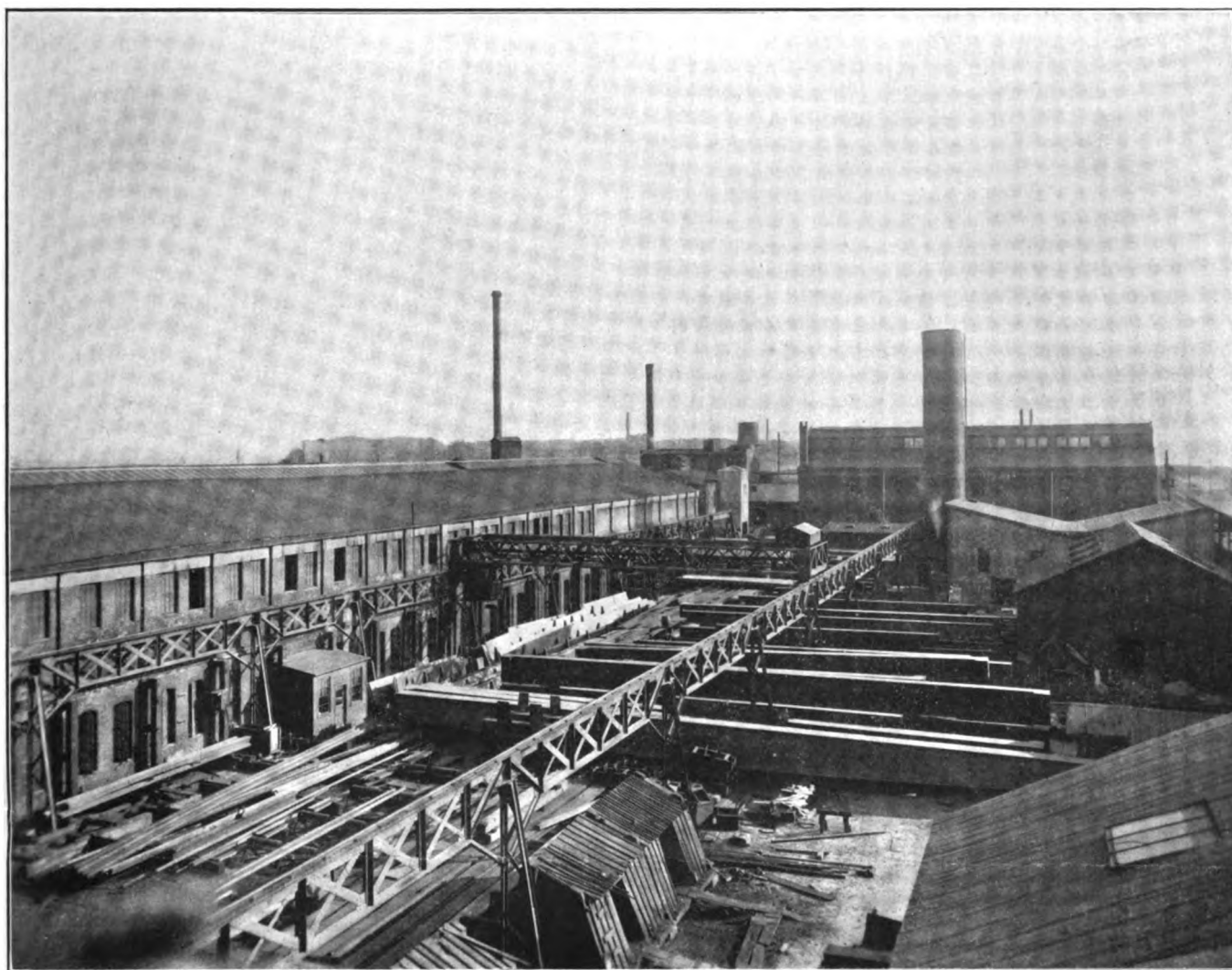
To Improve Your Lubricating Service

You have got to use something more than just oil or grease. To increase the efficiency and endurance of both oil and grease, add

DIXON'S FLAKE GRAPHITE

This graphite is unctuous and free from grit. It will polish engine cylinders and machine bearings, reducing friction, saving wear and preventing damage. You can trust Dixon's Flake Graphite.

JOSEPH DIXON CRUCIBLE COMPANY
JERSEY CITY, N. J.



A PORTION OF THE NILES-BEMENT-POND COMPANY'S PLANT, PHILADELPHIA, PA.

The view shows the crane runway, standpipe and stacks, all of which have been protected with Dixon's Silica-Graphite Paint for about five years without repainting.

BIBLICAL HISTORY LESSON

"What happened to Babylon?" asked the Sunday-school teacher.

"It fell!" cried the pupil.

"And what became of Nineveh?"

"It was destroyed."

"And what of Tyre?"

"Punctured!"—*Cleveland Leader*.

It is recommended in some of the automobile papers that the bright, exposed portion of the car which cannot readily be removed, such as the operating levers, may be given a bright but complete coat of vaseline to protect them from corrosion.

We think that the old time method employed by the bicycle rider for the protection of the nickel parts of his bicycle might be preferable. The method was to dissolve paraffine in gasoline and apply a coating to the bright parts. The gasoline evaporates with great rapidity, leaving a very thin coating

of paraffine on the bright metal which effectually protects from dampness and from corrosion. The very thin coating of paraffine is easily removed when required.

For protecting the rims of the wheels from rust and to prevent the tire from sticking to the rims, there is nothing equal to Dixon's Motor Graphite. It can be rubbed on with the hand or with a piece of cloth or cotton waste. Dixon's Motor Graphite may also be mixed with gasoline or even with water or oil in form of a thin paste and applied to the bright parts such as the levers, etc., and will be found a protective covering; when the time comes to remove it all that is needed is to rub the parts thoroughly with cotton waste or any cloth, and the graphite will be removed leaving a bright, nice polish.

A CANADIAN lawyer tells this story:

A bailiff went out to levy on the contents of a house. The inventory began in the attic and ended in the cellar. When the dining-room was reached, the tally of furniture ran thus:

"One dining-room table, oak.

"One set chairs, (6), oak.

"One sideboard, oak.

"Two bottles whisky, full."

Then the word "full" was stricken out and replaced by "empty" and the inventory went on in a hand that straggled and lunched diagonally across the page until it closed with:

"One revolving doormat."—*Everybody's*.

"TOO DARNED GOOD"

So said the superintendent of the crucible department of the Dixon Company when we showed him the following letter received by us:

"We placed with you sometime ago an order for eight graphite retorts to be sent monthly. We now write to cancel this order until you hear from us further and request that it take place at once.

"We are glad to state that we are now enabled to get eighteen melts of cyanide precipitate from one of these retorts, instead of eight as at first, and for this reason are cancelling the order for a time."

MACHINE MOULDING VS. HAND MOULDING

By JOHN ALEXANDER, Philadelphia

Part II

HINGED ROLL OVER-MACHINE-UP-DRAW

This is a machine for general all around work that I think is hard to beat, so long as you keep within the limits of it, and the men who are operating it. We have jobs on a 22" machine that take flasks from 14" x 23", ranging in quite a number of sizes, up to 23" x 39" x 5½" copes and 5" drags—26" x 26" x 4½" drags by 5" copes, and 23" x 26" x 5" copes by 9" drags; this machine being able to give us a 7" up-draw or draft. In operating this machine by two men, the board, with pattern, is bolted on to frame (not taking over two minutes time), drag, say, 23" x 39", is put on, one man puts on his facing if required, then fills up flask as full as necessary, then rams, scrapes off, puts on bottom-board, using two spring clamps (no wedges required), during this same time the other man has rammed up the cope, they both then roll over drag on to a leveling device, which operates and locks almost instantly; knock off spring clamps, turn on vibrator and draw pattern with board, and roll over to original position; they then turn cope on edge, the one finishing cope, the other finishing drag, and coring up if necessary; they then lift drag to its respective place on floor, close on cope, and are then ready to clamp and pour off. The same operation by hand, even with special first-class riggings, would likely be the laying of follow-board on floor, scraping or tucking sand under battens to get it to lay level, put the pattern down on board, then put drag on, facing and heap sand, and ram up; scrape or level off, then put on bottom board, using the usual floor clamps and four wedges, not forgetting to hammer them in tight; then as they go to roll over, of course, one or two clamps come off, because the helper didn't tighten his enough; well, when they do get it rolled over all right, and before he takes off his clamps, he must give it the usual tuck under the battens, to insure its setting right on the floor; off come the clamps and he must naturally slick the joint of his mould, and cut a little more off or into the edge of the pattern; put on the cope and he thinks he must gagger and the first thing you know is that the helper gets the — why he didn't have the gaggers clay washed; however, things get straightened out all right; the vent wire gets in its work, the cope is lifted off, then sponge the joint, the rapping bar gets into a hole some place and bang goes the hand hammer, sometimes a sledge, and what's the result, the pattern never was any good anyhow, it didn't have enough

draft to begin with, and the consequence is the brand new pattern may not last for more than ten castings from the abuse it has had with the rapping bar, and the edges all split off by the vent wire and trowel and swab; it don't stop here, as the edges of the mould have to be patched somewhere, you know it didn't draw right, and what are the results when cast—it has been patched too full and between this and forgetting to clamp his cope before ramming up, he has another, for the boss instead of for the customer; in the meantime, the fellows on the machine have made two or three moulds anyway, the machine having done the venting, rapping and drawing perfectly—no swabbing required.

HINGED ROLL OVER-MACHINE DOWN-DRAW OR DRAFT

This machine is much the same as the up-draw roll over machine, anymore than the clamping device is attached on the machine, and is much handier in a great number of cases than the spring clamps, only it confines you more to certain sizes of flasks in widths and depths of draw. On the former machine, we have found advantages to be from 35% to over 100% greater than any day's work we could get with A-1 riggings from the same class of work, and about the same thing can be said of the latter machine.

THE POWER HINGED ROLL-OVER AND UP-DRAW MACHINE

This machine is operated like the hand roll over machine, but rolling over and drawing is done by air or fluid pressure, this being accomplished in a very few seconds, no matter whether your mould is 800 or 2,000 pounds in weight—the whole operation is controlled by one small lever. We have flasks that are used on one of these 30" machines that range from 26" x 26" x 14" drag by 6" cope, 30" round flasks, other varying in sizes up to 38" x 45" x 7½" drags by 6½" copes, and really we don't know how we could get along without it, and can safely say we run from 60% to 90% better on a great variety of our work than we did three years ago under the old hand method, and castings were not so uniform.

GRAVITY MOULDING MACHINE

This machine has its own peculiarity of ramming a mould, and great care has to be exercised by the operator in moving the cradle with flask and pattern in it, so that the wads of sand which fall by gravity will back against each other properly. I can't say very much about its practical efficiency, but from the experience of four parties using them in and near Philadelphia, they say they are making out all right so much so that I know two of them have installed their second machine, but it being a later development in the art of moulding, and as it has to have its own special construction of flasks and so on, it may take a little while yet ere it comes to be recognized as the older machines are; anyhow, those same people say they can produce from 40% to 60% more and better work than by hand methods.

JARRING MACHINE

This machine is one that is adapted to a broad field of work, although not universal in its application and must be given judgment and discrimination when patterns are being constructed for use on it, as the sand must flow chiefly in one direction. For uniformity in ramming, I don't know of any machine or the best hand methods that compare with it. The

ramming is densest at the surface of the pattern, where you want it, and decreases in its density the further you go away from the pattern, thus allowing a freer escape for the gases. I have seen moulds of varying sizes, from 400 pounds to 15,000 pounds, rammed in a few minutes' time, when it used to take a number of hours to do the same operation and when patterns were drawn from the machine moulds, the moulder found he had very little to do to soft spots, as well as very few parts to finger or patch, in fact, nothing as compared with hand ramming and the hard work attached to it. Then again, this same machine can be, and is used to play a considerable part in making of cores and it's surprising to see a core maker (after he has used it a few days) putting in so much gravel in his core box, his crab or arbor, or his rods and hooks, then gravel and coke or ashes for his vents, then gravel on top again and then jar ram, afterwards butting off top of core and slicking joint, and when core is turned out of box, it is ready for blacking.

COMBINATION JARRING MACHINES

Those machines which jar ram the mould, roll over, vibrate and then draw the pattern, all this work as in other machines being performed by air pressure, are machines which have a great advantage over all the others where there is a large multiplicity of work, and pay well on their investment where conditions warrant it. Another combination, the machine which jar rams and then squeezes the mould, doing away with the sometimes necessary butt ramming before the bottom board or plate is put on.

SHOCKLESS JARRING MACHINE

A development of the year 1910 in the building of moulding machines, the term shockless as a distinctive name for this type of jarring machines must not be construed as the name shockless applies, only to the foundation or supports on which the machine stands. The jar ramming of the mould being done while the table or platen is descending; coming in contact with the ascending anvil in a suspended position, thus eliminating all shocks to the foundation or in other words, to more readily understand it, if we would take two hammers and knock them together in the air, we would have these conditions, and it is claimed by the manufacturers of this machine that the blow is twice as effective with the same expenditure of power as in the usual type jarring machine, hence we need have no fear of any pulsating variation in floor load while operating it, in fact, no more than in the operation of a power squeezer; this I believe was one of the conditions that has kept the jarring machines from coming more to the front, as the cost for foundations to combat this floor check or load was quite expensive in a great many cases.

SHOCKLESS COMBINATION JARRING MACHINES

Machines that jar ram, roll over, vibrate and draw, and machines that jar ram and squeeze, other conditions being the same as in the regular "shockless," are machines that merit all the credit given them, and when we see and hear of these machines effecting a saving of from 75 to 250% on green or dry sand moulds, or half moulds up to 50,000 lbs., we must realize there is something doing and it's reasonable to think that no firm could afford to install such enormous and expensive machines (first cost), if they were not sure of a great

return for so doing. In giving these few statements with their conservative amounts of work done, I believe you may ask me the question of how much it might cost to equip a machine to accomplish some of these results,—well, it is almost impossible to answer this question directly, but will say briefly that for many classes of machines it is of a minor consideration when compared with the output and life of your patterns and flasks, and the weight of metal you save, and I have never seen the foundryman yet who has ever regretted the use of the moulding machine, but some of you may and do contend that if you had the same good riggings you could beat the machine all hollow, but remember physical labor cannot last nor endure (and it don't want to) the laborious work the same as a moulding machine. However, don't let us ever think the moulder is going to be done away with—far from it—there will always be moulding done by hand to a certain extent, but the machine is advancing the art and the moulder of the future will have to advance to a much higher standard as a mechanic to keep up with it.

SOME BENEFITS DERIVED FROM USE OF MACHINES

Castings are much truer to pattern; they weigh less and weights are more uniform. Castings being truer, require less finishing in machine shop. A greater output or production for cost entailed, therefore, castings cost less. Patterns last a considerably longer time.

I may now say that in taking thirty-nine foundries I have visited of late, I found a total of 717 moulding machines in daily operation, handled by skilled moulders and unskilled help, making an average of about nineteen to each foundry, and it may surprise some of you to know that in sixteen foundries in Philadelphia they stand with an average of eleven to each foundry, thus proving to most of us the usefulness and advantages of the moulding machine.

I will conclude by saying that if mechanical engineering or designers of machinery would give a little more attention to the foundry and change or modify their designs, doing away with projecting brackets, lugs, journal shaft boxes and so on, and bolt them on where practical, that moulding machines would undergo a wonderful change in the next few years.

PLEASED WITH DIXON'S GENERATOR BRUSHES

July, 6, 1910.

*Joseph Dixon Crucible Company,
Jersey City, N. J.*

GENTLEMEN:—The last generator brushes we bought of you are giving such good satisfaction, we will be pleased to have you send us ten brushes for our thirty-five K. W. G. E. Turbine. Brushes are to be 1¼ inches wide, ½ inch thick, 2¼ inches long, with copper connection to be not less than four inches long.

Thanking you to rush this for us, we remain,
Yours truly,

ELDORADO PENCILS

"The Elorado, I must say, is the best pencil I have ever used, and I have handled them all." So writes a discriminating user.

MORE RECORDS FOR DIXON'S PAINT

JULIAN SARGEANT ALLEN,
201 Hartford Fire Insurance Bldg.
HARTFORD, Nov. 9, 1910.

*Joseph Dixon Crucible Company,
John Hancock Bldg., Boston, Mass.*

DEAR SIR:—Replying to your inquiry of the 7th inst.,—on that day the mooring you refer to was taken up for the winter and the anchor painted last Spring with Dixon's Silica-Graphite Paint, is found in better condition than usual. Most of its surface was entirely free of rust, and only in two or three places there were a few small groups of little rust blister; these may have been due to chafing of the paint by movement of shackles, etc., being swayed against the anchor at these points by the motion of the cables due to tides and passing vessels.

The paint is good for the purpose in my opinion.

This anchor has been down about five months this year, location, etc., as indicated in my previous correspondence with you concerning it.

Yours very truly,
(Signed) JULIAN S. ALLEN.

THE REAL COST OF PAINTING

It is not possible to judge the cost of paint and painting by the cost of materials and labor only. Paint is used for the purpose of protecting the structures to which it is applied, and the way it performs this function is the real guide to a paint's value and, therefore, to its cost.

A little figuring will immediately show the possibilities for economy or extravagance in the purchase and use of paint. Suppose, for instance, you have some smoke-stacks to be painted which will require twenty-five gallons of paint. Various conditions govern the cost of labor, but we will assume that the labor cost for this job will be \$50. Two paints are brought to your attention; one a high quality paint selling, say at \$1.60 a gallon; the other a cheaper paint selling at \$1.00 a gallon. If the latter material is selected, the total cost of the job will be \$75.00. If the high grade paint is selected, the cost will be \$90.00, a difference in favor of the cheap paint amounting to \$15.00. On this basis the sum of \$15.00 has apparently been saved.

Suppose, on the other hand, and this is a perfectly reasonable supposition, that the service the high grade paint gives would make repainting unnecessary for a period of three years, while the cheap paint only protects the stacks for two years. A little more figuring will show how much the cheap paint saves (?) at the close of a twelve year period. The total cost for paint and labor, four applications of the high grade paint, will be \$360. The total cost of paint and labor, six applications of the cheap paint, will be \$450.00. In other words, it would cost \$90.00 more to use the cheap paint than to use the high grade paint.

In this comparison, conditions have been made reasonably favorable to the cheap material. While in the hypothesis, we have made the price of the high grade paint 60% greater than the cheap paint, we made the service only 50% greater. Also we figured on a comparatively small job in which the

total cost even with the more expensive material is under \$100. It serves to show, however, the possibility for extravagance in buying cheap paint. If this was a job where the cost ran in the neighborhood of \$1,000 you can readily see that a large sum of money would be wasted were the cheap paint used. Also, if the structure should last twenty-five years instead of twelve, the total waste during that period would be double. Again, should the high grade paint give a service of five or six years against even three on the part of the cheap paint, the saving through the use of a more costly paint would be greatly increased.

This thought is worthy of emphasis in connection with the use of Dixon's Silica-Graphite Paint. While Dixon's is not to be classed as an expensive paint, it is easily possible to buy very much cheaper ones; but as is indicated by the figures above, a cheap paint is very apt to prove the most expensive in the end. Dixon's Silica-Graphite Paint is a pure, boiled linseed oil paint in which the pigment is silica-graphite. This pigment is absolutely inert so that no destructive action occurs between it and the vehicle. The pigment is acid and alkali proof, and is unaffected by heat or cold. Not only does it meet perfectly the theoretical requirements of a good paint, but its record shows its superiority in actual service as well. It has been on the market for nearly fifty years.

Any one who buys or uses protective paint, should look into the matter, provided he is not familiar with the Dixon material. Our Paint Department will be glad to assist in any way possible.



Gauging Efficiency in the Lubricant

A lubricant's efficiency is to be judged by what it will actually do. It is on this basis that

DIXON'S FLAKE GRAPHITE

has "made good"—it does things. It saves wear in cylinders, bearings, at all friction points by perfecting the friction surfaces themselves. It has been doing this for years and years.

JOSEPH DIXON CRUCIBLE COMPANY
JERSEY CITY, N. J.

GRAPHITE

VOL. XIII.

MAY, 1911.

No. 5.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

GRAPHITE LUBRICATION

By L. H. SNYDER

Graphite is closely related to the diamond chemically, but is much different in structure physically. Graphite occurs as and is known by the names of graphite, plumbago and black lead; the term graphite usually referring to the American product, plumbago to the Ceylon product, black lead to the inferior grades of graphite.

The origin of graphite is not definitely known; probably it was formed from the distillation of vegetable matter, though this is only a theory. The process of refining, unlike the refining of petroleum, has been taken care of by nature, a low grade of graphite being formed in some localities, while in others a high grade of graphite, rich in unctuous qualities, is found.

The purity of lubricating graphite is usually expressed by its percentage of graphitic carbon, though graphite analyzing high in carbon may be totally unfit for lubricating purposes because of its physical formation and lack of natural lubricating qualities. If one were to insist on graphite analyzing practically 100 per cent., he might have powdered charcoal palmed off on him.

Probably the best known American natural graphite is that produced in the Ticonderoga district. This is mined in flake form, and while the flake formation remains through every stage of refining, the graphite may be ground to a state of extreme fineness.

Examination of a bearing surface under a powerful microscope, will show it to be full of irregularities, something on the order of a nutmeg grater. Flake graphite, when used as a lubricant, fills up the depressions, becomes pinned upon the pointed elevations and forms over all a thin, tough, veneer-like coating of marvelous smoothness. This prevents actual contact of the metal surfaces and substitutes a graphite-to-graphite contact, which means a reduction in friction and further protects the metal surfaces from cutting and like injury.

When finely pulverized flake graphite is used with the cylinder oil as a lubricant for automobile gas engine cylinders, smoother running is obtained and better compression (resulting in more power), and the danger of scored cylinders is elimi-

nated. If the cylinders should become dry for any reason, the graphite will prevent cutting.

The cause of most trouble in the use of graphite in a gasoline engine is the tendency to use too much. Where splash lubrication is employed, the graphite should be put into the crank case mixed with the oil in the proportion of a teaspoonful to a quart of oil. This should be done whenever the crank case is cleaned out and new oil added. This will depend, of course, on the mileage and usage of the machine.

Where splash lubrication is not employed, a method that is very satisfactorily used is the one suggested in the July 22, 1908 issue of *The Horseless Age* by Mr. Roberts, that is, removing the spark plug and squirting a little graphite into the cylinders while the piston is at the end of its stroke. This may be done by means of an insect gun or a quill and rubber tube. Where the quill and rubber tube are used, the quill is filled with graphite and the contents are injected into the cylinders by blowing through the tube.

When the fine flake mentioned above is used on the tires, there need be no fear that the graphite will prove in any way harmful to the rubber. It is far superior to talc, and when applied to the tire rims will prevent rusting. Oil and graphite mixed to a stiff paste and used upon threaded connections will insure a tight joint and can easily be taken apart without spoiling the parts.

Special graphite greases are made for the different parts of the automobile. One that has proven most popular where adapted to the design of the car, is graphite wood fibre grease for transmissions. Machines supplied with grease cups also make use of graphite cup greases which owe their superiority to the graphite incorporated in them.

ANOTHER ROOF RECORD FOR DIXON'S PAINT

We received the other day a letter from Mr. L. D. Mac Williams, boat builder, marine and mechanical engineer, in which he tells us of a service rendered by Dixon's Silica-Graphite Paint on the tin roof of his veranda. This roof was first painted with three coats of Dixon's Paint twenty-five years ago and repainted but once since that time. Mr. MacWilliams states that the roof is now in perfect condition and shows not a single rust hole.

Records of this kind, while unusual, are not really rare exceptions where Dixon's Silica-Graphite Paint is used. If a thorough protective film of at least two and preferably three coats are given originally, it will be found that repainting may be deferred for a considerable period.

DIXON's graphite publications sent free upon request.

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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Vice Pres. & Counsel—WILLIAM H. CORBIN
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Secretary—HARRY DAILEY
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EUROPEAN AGENTS,
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

DIXON'S AXLE GREASE FOR HORSESHOE CALKS

Most users of vehicles know the value of Dixon's Axle Grease for lubricating axles, but perhaps they do not know of its value on horseshoe calks. If your horses are shod with "Never Slip" shoes you will find it highly advantageous to lubricate the threads of the calks with Dixon's Grease before screwing them into the shoes; this will make it easy to remove old calks when it is desired to replace them with new ones.

RESIGNED

Mr. H. S. Snyder, of the Advertising Department of the Joseph Dixon Crucible Company, has resigned and made connections with the Fleischmann Company of New York. Mr. Snyder's successor is Mr. Sherman Paris.

GRAPHITE FOR ELEVATOR CABLES

The following letter shows what an experienced elevator inspector thinks and knows about Dixon's Flake Graphite. For steel cables of all kinds, Dixon's Waterproof Graphite Grease is well adapted and very widely used.

OMAHA, NEB., Feb. 7, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—I receive GRAPHITE and think it a fine paper. I am an insurance elevator inspector; have been for twenty years. I began to talk graphite and oil for cables. I did lots of it for the next five years. It was the elevator repairers that were against me. Now it is in general use here and Council Bluffs, St. Paul, Minneapolis, Sioux City, Denver, St. Joseph, Kansas City. It prolongs the life of a hoisting cable one to three years.

Yours very truly,

HUNDRED YEARS AGO

1911—1811

United States Congress authorized the occupation of East Florida.

The renewal of the United States Bank Charter was refused by the casting vote of Vice-President Clinton.

The Indians under Tecumseh were defeated at Tippecanoe by General Harrison.

The first steamboat ran on the Mississippi and Ohio Rivers.

United States prepared for war with England. Borrowed \$11,000,000 and doubled duties on imports.

Astoria founded by John Jacob Astor.

FROM THE NEW DIRECTORY

Many will be surprised to learn that there are only fourteen Persons in the city of New York and only two Men.

It is also surprising to know that in so large a city there are only four Schoolhouses and only three Bookkeepers, there are seventeen Balls and nine Batts.

There are thirteen Beans, one Pickle and eleven Frankfurters. There are eighty Glasses but only one Schooner. There are two Drinkers, two Boozers and four persons who are Sober. There is only one Home but several hundred Bells.

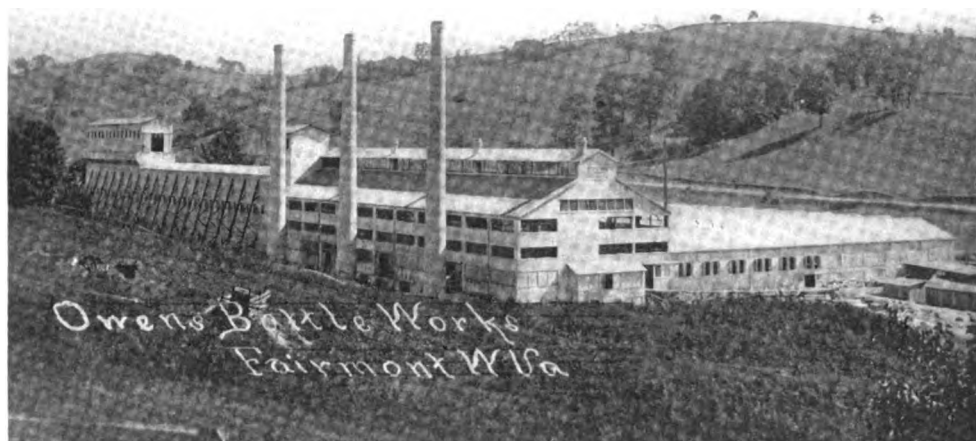
In the matter of animals there are 132 Cranes, eight Bears, twenty-three Beavers, twenty-nine Hogs, one Rabbit, four Mules, four Goats, nine Ratts, one Catt and one Cow. There are a number of Wolfs.

There are fifteen Robins, five Ravens, two Thrushes and three Larks.

The sky is represented by four Suns, twenty-five Moons, one Venus, six Mars, three Jupiters, five Stars.

Other New Yorkers bear the names of Ham, Selling, Buyer, Cantaloupe, Combs, Fatt, Leans, Spare, Plump, Spear, Sword, Good, Better, Best, Bad, Worst, Rich, Poor, Shade and Sunshine, Milk and Honey, and a great many other suggestive and curious names.

The Smith tribe is thriving as usual, there are 3,361 Smiths, not to count the various other ways of spelling that name. The Browns are less than half the Smiths, while the Joneses number 857.



OWENS BOTTLE WORKS OF FAIRMONT, W. VA.

The very attractive view shown above is that of the new plant belonging to the Owens' Bottle Works. Being Post Card size, the picture does not do full justice to the plant, which however, can be seen to be of model as well as modern construction.

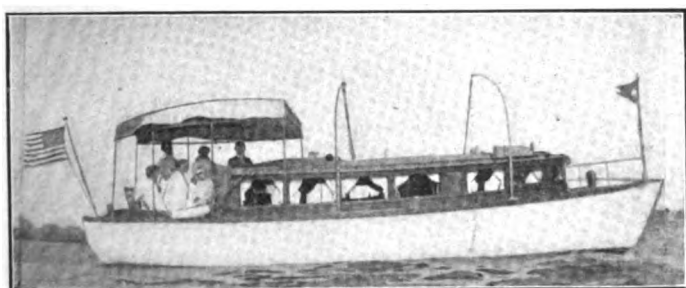
Quite in line with the spirit in which the Owens' Plant was designed and constructed, was the specification of Dixon's Silica-Graphite Paint, a model protective coating, though perhaps its half century of service does not entitle it to the term "modern." Dixon's Paint was used for both shop and field coats. The architect for the plant was Harry W. Wachter, Toledo, Ohio; The Donovan Wire & Iron Company, also of Toledo, were the iron contractors.

STILL ANOTHER

Mr. Sam Mayer, manager of Dixon's Chicago Branch, now gets an envelope addressed:

"MR. SAMUEL DIXON,
JOSEPH DIXON CRUCIBLE CO.,
MONADNOCK BLOCK,
CHICAGO, ILL."

Mr. Mayer has received some very queerly addressed envelopes.



THE "APACHE" AND DIXON'S GRAPHITE GREASE

We show above the motor boat "Apache," belonging to Rear-Commodore Shelden W. Decker of the Pavonia Yacht Club of Bayonne, New Jersey.

She is one of the most complete and roomy small cruisers

in the waters of New York Bay; very heavily built and copper fastened throughout. Her dimensions are thirty-two feet over all, eight foot ten inch beam; thirty inch draught.

The general layout consists of a forward cabin, two clothes closets and sleeping accommodations for three. Next aft, on the starboard side, is the galley, equipped with coal stove, dish closets, etc. Opposite, on the port side, is the toilet fully equipped; next aft on the port side is the ice box containing a coil which supplies the drinking water. The engine room and main cabin come next, which have sleeping accommodations for three.

A complete system of electric lights is furnished by the use of a storage battery. A dynamo is used for recharging same; this battery is also used for starting the engine. The electrical outfit is controlled by a switchboard on which is placed an ampere and volt meter, rheostat and the necessary switches.

The engine is a fifteen horsepower Mianus, which drives this broad-beamed boat nearly ten miles per hour; not one hour, but as many as you feed it gas and oil.

Mr. Decker gets all there is out of motor boating and practically lives on his craft during the season. Shortly after he put his boat in commission last year, he noticed that one of the bearings was inclined to run hot. The trouble seemed to grow worse with time instead of better, until some one finally recommended Dixon's Graphite Grease. This was tried and had the usual and expected effect—the bearing ran smoothly and coolly. When Mr. Decker overhauled his boat at the end of the season, he found that the shaft was nicely polished with Dixon's Flake Graphite. Now a regular part of the "Apache" cargo is Dixon's Graphite Grease.

FINE WEATHER SUICIDES

We are told that cold damp weather tends to make people who have suicide in mind, to hasten the end. Now we read that statistics of suicides show that almost everywhere the most agreeable and beautiful months, May and June, are those during which self-destruction is commonest; apparently because the working day is then longest and fatigue then most likely to result in despondency.

Among idle males the rate is twice as great as among the occupied males, so overwork seems less likely than insufficient work to excite the suicidal impulse.

THE NEWER EFFICIENCY

More and more is the value of efficiency being appreciated. Of course, efficiency is a means rather than an end, but true efficiency has been found to lead always to good ends.

Efficiency is reflected in the general attitude of the nation and one of the symptoms is exhibited by the spirit of conservation. A particular case of increased efficiency is supplied by the work of Harrington Emerson for the Santa Fé Railroad. Mr. Emerson was employed in the introduction of the new system in the Santa Fé shops, says "The Karat." As a result the number of engines out of service per year, was reduced from 1,750 to 256.

Repairs were put through the shops on a schedule as carefully arranged as that on an express train. The time consumed in putting a piece of work through was cut down one-half, and work was nearly always finished on time. The number of tons hauled per engine mile was greatly increased, the cost of fuel was cut down, engine delays were greatly reduced and a money saving running from \$1,200,000 to \$1,700,000 a year was accomplished.

As an illustration of how costs can be cut down by promoting efficiency, Mr Emerson took the item of fuel. This is one of the largest items of expense to a railroad. He found that the Santa Fé was burning 260 pounds of fuel per road unit. A scientific examination showed that the work could be done on a test with eighty pounds of fuel.

An ideal standard is one-fifth of a pound per horsepower. An easily practical standard is one pound per horsepower, yet some of the roads are using five and six and seven pounds per horsepower.

The item of belting in the Santa Fé shops, is another illustration. Under the old method it cost 100 per cent. to maintain the belting for a year, the company paying out \$15,000 every twelve months. By putting an expert in charge of the belts and making him responsible for them, this charge would be reduced to \$2,000 a year. But this was only part of the saving, for there were no more delays from broken belts, the new practise being to repair a belt before it broke down, just exactly as is done with a railroad bridge.

It is the study of these refinements of practise, so to speak, that makes for efficiency. We are especially interested in the few foregoing items because of experience with products of our own. In practise the fuel efficiency is to quite a marked extent dependent on lubricating efficiency. It is evident that machinery cannot be made to run without some lubrication and from this minimum efficiency increases with a nearer approach to ideal lubricating conditions. In this approach, Dixon's Flake Graphite helps as no other lubricant can. The action of graphite is distinctly different from oil or grease; it attaches itself directly to the bearing surfaces, filling in the depressions and forming over the whole a thin, tough graphite glaze. This graphite glaze absolutely prevents cutting and seizing, makes solid friction between parts materially less and reduces the strain on the oil or grease to such an extent as to enable less of it, and often cheaper grades, to do the work with thorough satisfaction.

The item referred to on belting also has an interest for us. We watch the belting in our own shops very carefully and keep it in its naturally efficient state by the use of Dixon's Traction Belt Dressing. That our system leads to efficiency,

is shown by the fact that we have had some belts in our factory run for eighteen consecutive years without ever being taken up. When belting is new it has the necessary clinging qualities due to the natural oil in the belt which renders it pliable. In actual shop practise, however, adverse conditions necessarily exist, dust and dirt settle upon the belt; possibly steam or water reach it, or it may be exposed to excessive heat or some other deteriorating influences. Even if conditions are not abnormally severe, the ordinary wear and tear and surroundings will affect belting, more or less slipping is apt to occur and this not only means waste of power, but a drying out of the belt through the friction generated by the slipping. Dixon's Traction Belt Dressing keeps the leather in its natural condition of pliability, so that it hugs the pulleys and transmits full power without slipping.

Those who are interested in increased efficiency will do well to look into the Dixon products which are helping efficiency records in all mechanical fields.

FOR THE PESTILENTIAL FLY

Heat a shovel and drop thereon twenty drops of carbolic acid; the vapor will kill flies. One dram bichromate potash in two ounces of water, add a little sugar, will answer the same purpose. The extermination of the common house fly means not only health but life itself to us.



An Easy Repair For Stove Linings

A broken stove, range or furnace lining can easily be restored to good as new by the use of

DIXON'S STOVE CEMENT

This cement comes in the form of a dry, coarse powder and is mixed with water to a thick paste. It dries quickly, has high refractory powers and gives long service.

JOSEPH DIXON CRUCIBLE COMPANY
JERSEY CITY, N. J.

A DIXON RECORD ON THE COAST OF MAINE

The view we show herewith, includes a section of an ice-house on the Maine Coast which has been protected with Dixon's Silica-Graphite Paint, Dark Green, for the past ten years. The view was taken close to the structure in order



to give a clearer idea of the excellent condition of the shingles. The protection provided by Dixon's Paint is demonstrated by the service here rendered, where our material has stood up under the severe coast storms of winter and the hot suns of summer.

THE CREATIVE POWER OF ADVERTISING

By H. S. SNYDER

Did you ever stop to realize what portability and distribution mean to wealth? If the manufacturer, for instance, could not move his products outside of his factory building they would be next to worthless. As he increases their distribution over the country, he adds to their collectible value, so to speak.

Realizing the necessity for distributing his product, the manufacturer does not wait for the jobber or wholesaler to come to his factory and buy his goods, but sends out salesmen to interest these jobbers or wholesalers on his own account. After the jobber or wholesaler has the goods, he does not sit idly by either; his salesmen are sent out to interest the retailer. After the goods finally reach the retailer, however, very little further effort is apt to be made in the way of distribution. The customer is supposed to come in and ask for the goods he wants without being furnished any incentive from the outside.

To more or less extent this scheme works chiefly for the reason that the final consumer must be supplied with a certain quantity and variety of goods. He must have a certain amount of food and clothing, household equipment, etc., then his desires and inclinations lead him into certain purchases of luxuries. Some, taking these facts for their text, ask what is the value of advertising. A little investigation will show that advertising may be broadly considered as having two values. The first is a competitive value—it gives the advertiser an advantage over the non-advertiser by making the public familiar with the former and his goods. The second value is absolutely creative—in making two blades of grass grow where formerly there were none. For instance, the phonograph, had it gone unadvertised, would probably

have had less than 25% of its present sale. The advertising in this case has created over 75% of the value of the product to the manufacturer. Of course, the phonograph is a luxury, but advertising can create even in the fields of necessity, though there must usually attend a certain amount of competitive loss here. The use of breakfast foods is almost entirely due to advertising. Prepared foods of various kinds have been built up through advertising.

One of the chief creative forces of advertising is the confidence it generates. Ordinarily there will be a number of different manufactured products in the same line that are of comparatively equal merit. Jones' bees-wax will in all probability be about the same as Smith's. If Jones advertises, however, and Smith does not, he creates a certain amount of value for his bees-wax that Smith misses. In the first place, he lets the people know that there is such a thing as Jones' bees-wax. They may or may not know that Smith makes bees-wax. In the second place Jones tells how his bees-wax is prepared free from adulterating material; how the full quantity is provided for the price, and explains the general uses and conveniences of his bees-wax. This advertising begets a definite knowledge of Jones' product, which in turn tends to put confidence in Jones' product. Smith's bees-wax may be equal to Jones' in every way, but the point is you don't know it.

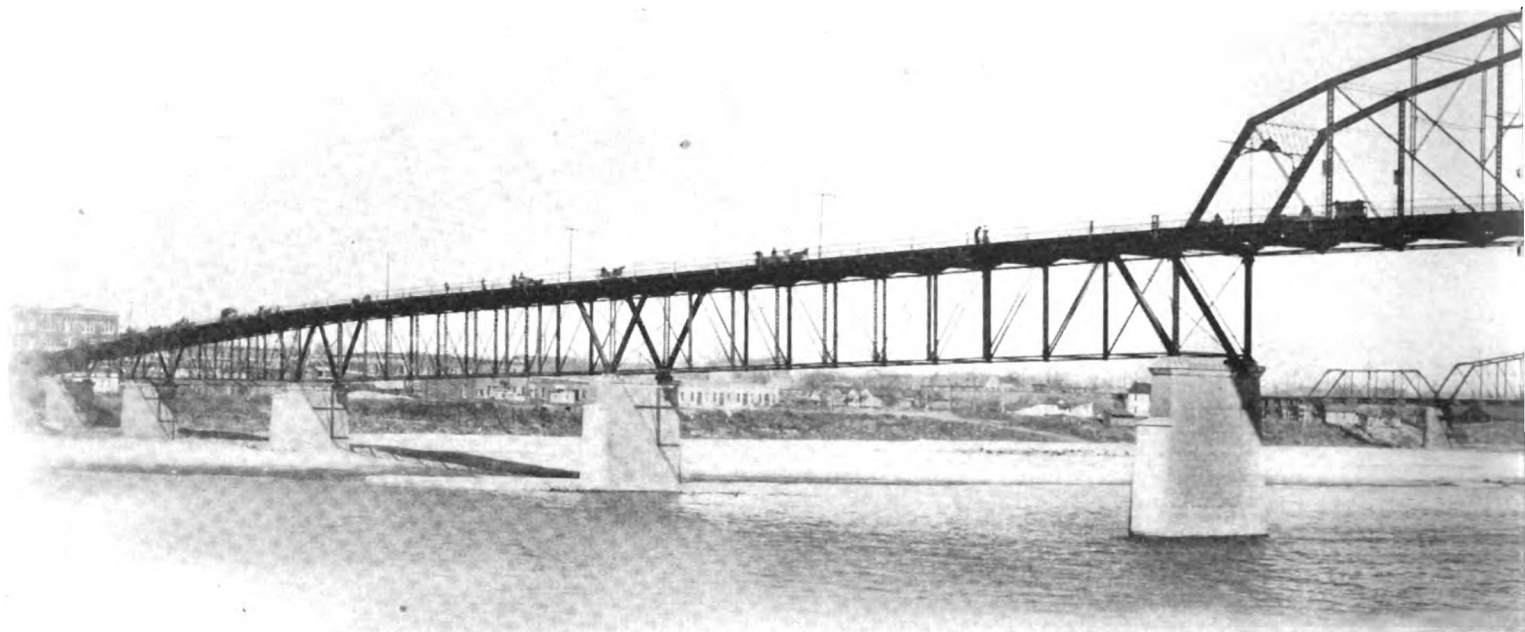
Suppose it is a case of men instead of materials. Neighbor Brown has lived next door to you for ten years. You borrow his lawn mower, he smokes your cigars, your wife and his wife exchange cake recipes, and your respective offsprings scrap most agreeably. Under certain fixed conditions you could predict quite closely what Brown would do. You may also know that the family of Robinson lives on the next street. Robinson is probably just as good a man as Brown, but from your standpoint he is not so good a man because you know Brown and you don't know Robinson. It is the same proposition in materials. You trust what you know to be trustworthy; but you do not feel quite like trusting the unknown.

A RITA METER

Rita, Rita,
Growing swita
Every day;
Will you never,
Never, ever
Come my way?

Rita, Rita,
When you mita
Chap like me,
You should copper
Such an oppor-
Tunity.

Rita, Rita,
Why, pray, trita
Fellow so?
Won't you ever,
Ever, never
Not say: "No?"—Lippincott's.



ARKANSAS RIVER FREE BRIDGE

The two page illustration which occurs above, shows the Arkansas River Free Bridge, Little Rock, Ark.

The total length of the bridge between abutments is 1,740 feet; the length of the channel span is 375 feet, while the height of the channel span above high water is 45 feet. There is a driveway twenty-four feet in width, and a footway on each side five feet; the cost of this structure was over \$377,000.

The entire steel work of the Arkansas River Free Bridge, is thoroughly protected against the elements by Dixon's Silica-Graphite Paint, Natural Color, which has a splendid record on maintenance work of all kinds.

The middle West spirit of "Show Me" prevailed in the selection of Dixon's Silica-Graphite Paint for the Arkansas River Bridge, and in connection with the specification, application and sale on the Dixon material should be mentioned: County Judge Joseph Asher; County Engineer Theodore Hartman; Charles Mackey, contracting painter, and J. W. Mast, supply dealer

TRAPPING WILD HORSES

A very interesting article on this subject appeared in the December issue of *McClure's Magazine*, written by Rufus Steele. The horse is probably the most valuable of animals to modern civilization both for pleasure and business. It is true that the motor car has very largely supplanted him in the former field and is at least competing with him in the latter, but still we are told that the demand for horses has been increasing right along with the increase in the use of the automobile. Something concerning one source of supply

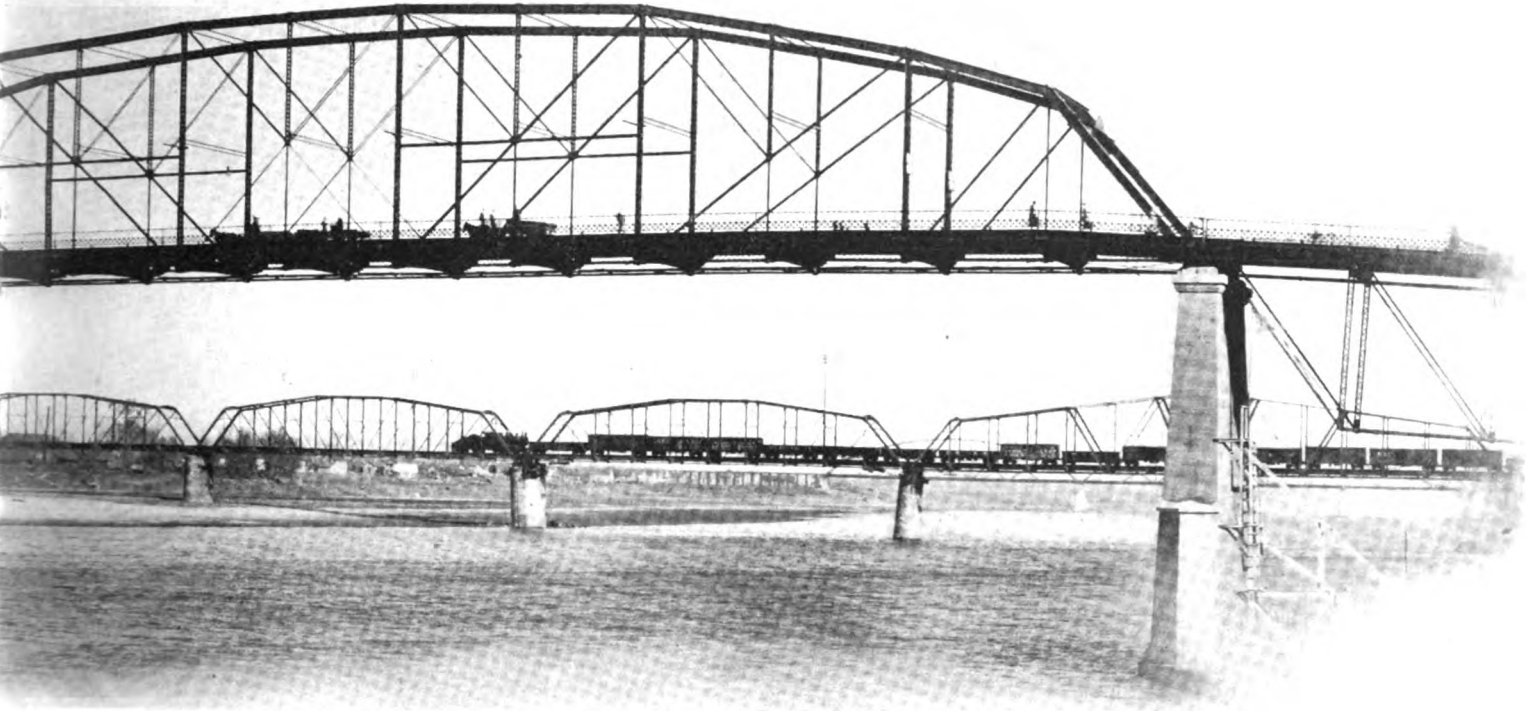
may prove of interest, especially since it has the added feature of picturesque Western life. The article referred to states that there are in Nevada at least 50,000 wild horses, and perhaps double this number. The country is rough and rugged, so that it is not easy to capture the animals.

Single captures would not prove profitable and so it is necessary to secure them in bands. To this end, corrals are constructed and the horses driven into them—which sounds very simple, but requires no little skill in its execution.

A recent innovation, the invention of which is accredited to Charles ("Pete") Barnum, is the use of canvas corrals. The advantage that these possess over both the timbered and wired corrals is greater facility in erection. They may also be quickly taken down and thus may be used many times over.

Herds of horses have, like most other herds, a leader and in trapping a band the wits of the riders are pitted against this leader's strategy. These wild leaders are quick to scent danger, however, and not infrequently escape the best efforts of the mustangers (as the riders are called) to force them into the fenced-in ambush.

The story of one outlaw stallion which was nicknamed "Sontag" is unusually interesting. Taken by surprise with his band, and finding it impossible to lead it again into freedom, he made a headlong dash through the circle of riders and dodging the reata, escaped to freedom. Two or three months later, "Sontag" with a new band was the object of another campaign. After an exhausting run of some twenty miles, the wild horses permitted themselves to be driven into a corral. Again the intrepid leader of his horse band made a dash for liberty, but this time the lariat was thrown over his head. In the long race that followed, the cinch of the lassoer's saddle



became loosened and one of the riders rushed to the rescue, grabbed the rope and yelled, "Let go." The words were given too soon, however, for before the second rider could fasten the reata about his saddle horn, the wild stallion had torn the rope from his hand. Two years later, the same animal with another band was captured for the third time, and considered safely imprisoned in a wire-fenced corral. Ten days later, however, when the captors returned they found their quarry gone, two dead mustangs and a broken gap in the wire showing how the escape had been accomplished.

The article states that while the mustangs are hard to secure and difficult to break, once broken, they prove quite submissive.

DIXON'S "SEQUOIA"

Dixon's Sequoia Pencil belongs to the class of commercial pencils. It is made in round shape and in hexagon shape and finished in yellow. It carries a nickel tip and rubber.



The name Sequoia, slightly changed in spelling, comes from Sequoyah, the American Cadmus, who invented a Cherokee syllabary by which the Cherokee are enabled to read and write.

Sequoyah is depicted, in the life written of him, as a young Indian pointing to a tablet of letters.

Although the portrait represents a young Indian, Sequoyah was of middle age. He perfected his Cherokee syllabary, which is not an alphabet of letters, but signs and figures de-

noting the syllables of the Cherokee language. Sequoyah was an expert with a pencil and brush, but was little known outside of the Cherokee tribe and but few biographical dictionaries mention him.

FOR INFORMATION SAKE

"In the Subway, oh, my darling,
When the cars are tightly packed
And the train is swiftly speeding,
While your nerves are sorely racked;
Better then give your attention
To the cards exposed to view—
It is best that we should read them—
Best for me and best for you!"

DIXON'S No. 688 CURES NOISY GEARS

Our Atlanta office reports the case of one of their customers who had been troubled with noisy gears and upon recommendation of our office, adopted Dixon's No. 688. Our customer was so pleased that he wrote the following letter:

"Replying to above, desire to say that three of us owners of Oldsmobiles at this place, have packed our front gears with your No. 688 Graphite Grease and it has been entirely satisfactory up to the present date. It has entirely eliminated the noise that these gears have been making. I would not try to run my machine without this grease in the front gears."

DIXON'S graphite publications sent free upon request.



THE GIMBEL STORE OF NEW YORK

D. H. Burnham & Co., Architects

Milliken Brothers, Inc., Fabricators

Thompson-Starrett Co., General Contractors

The mammoth new department store of Gimbel Brothers is eleven stories high and extends on Sixth Avenue from 32nd to 33rd Street. One of the views shown herewith gives some idea of the proportionate size of the structure.

Everything about the store from its conception to its completion was done on a big scale. For instance, there are in the building thirty-six passenger elevators, 120 single flights of stairs and a total floor surface of 11,000,000 square feet. There are about 100,000 square feet of glass in the building and forty-five large show windows.

The pneumatic tube system extends over seventeen miles in length, with 370 stations. There are 24,000 incandescent lamps and the wire for the lighting system runs up to about 540,000 feet or over 100 miles.

The store area is divided into 390 sales departments, which includes over 9,000 show cases. The second view shown herewith gives a bird's eye glimpse of the store's interior.

In the frame work of the building are 2,406 steel columns, and the total weight of the steelwork comes to 12,000 tons. The entire tonnage of steel was protected with Dixon's Silica-Graphite Paint, this specification being quite in harmony with the general up-to-date conception, design and equipment of the building. Dixon's Natural Color was used for the shop coat, and Olive Green for the field coat.

A GLOSSARY OF AERONAUTICAL TERMS

By L. R. W. ALLISON

The September issue of *Machinery* gives quite an extensive list of terms used in connection with the development of aerial navigation. Some of these we give, believing that they will be of interest to our readers who may not have seen the original article in *Machinery*.

Aerodrome.—A mechanism similar to the aeroplane and used in substitute; a course for flying machines. (Use is usually confined to latter term).

Aerodromics.—The art of flying in the air with a heavier-than-air machine.

Aerofoil.—Used as a substitute for "aeroplane."

Aeronaut.—One who navigates the air.

Aeronef.—Any type of heavier-than-air machine.

Aeroplane.—A dynamic machine. Name now given to any heavier-than-air machine with diversified form of supporting planes, but essentially applicable only to flat surfaces.

Airman.—One who navigates the air; an aeronaut.

Automatic stability.—Stability that is maintained irrespective of any operating control—the self-action of the controlling surfaces in suiting themselves to flight.

Aviation.—Motion through the air by heavier-than-air machines.

Aviator.—The operator of a heavier-than-air machine.

Baldwin's patent cloth.—A rubberized silk fabric, light in texture, used for covering aeroplane surfaces and balloons.



INTERIOR VIEW OF THE GIMBEL STORE, NEW YORK

Biplane.—An aeroplane with two main supporting surfaces, one above the other.

Dirigible.—A steerable balloon, controlled and propelled by mechanism.

Double decker.—An aeroplane with two main planes; a biplane.

Double monoplane.—A monoplane with two supporting surfaces in the same plane, one in front of the other.

Helicopeter.—A heavier-than-air machine in which flight is secured by propellers rotating in horizontal planes.

Monoplane.—An aeroplane with one or more supporting surfaces, all in the same plane.

Montgolfier.—A hot-air balloon.

Multiplane.—An aeroplane with three or more main supporting surfaces; a polyplane or a triplane.

Ornithopeter.—A machine which attains flight by bird-like or flapping movement of the wings.

Plane.—Literally a flat surface; in aeroplanes a flat or curved surface.

Polyplane.—A multiplane.

Single-decker.—A monoplane.

Skin-friction.—The friction of the air against aeroplane surfaces.

Starboard side.—The right side.

Tail.—The framework and planes in the rear of the main plane, collectively.

Triplane.—An aeroplane with three supporting surfaces.

Up-wind.—Moving against the wind.

Warping.—Also called "wing warping;" the act of tipping or twisting of movable planes for the maintenance of equilibrium.

Weight factor.—Ratio of the supporting surface to the total weight of the machine.

Wright altimeter.—An instrument invented by the Wright Brothers for measuring altitude. Used in place of an aneroid barometer.

Yoke.—In aeroplanes, a framework of tubing which fits about the aviator's shoulders and is used for insuring lateral stability.

A ONE-CYLINDER CAR CLIMBING A HILL

I think I can I think I can!

I think—I can—I think—I can!

I—think—I—can—I—think—I—can!

I—think—I—can—I—think—I—can!

I—guess—I—can't—I—guess—I—can't.

I guess—I can't!—I guess—I—can't!

I KNOW I——CAN'T!—Life.

ALL THAT has been written about graphite as a lubricant, and a vast amount has been written, may be boiled down in a few words: all kinds and forms of graphite are natural lubricants, but the wonderfully thin, smooth, tough flakes of Dixon's Ticonderoga Graphite are absolutely the only form of graphite that will slowly but surely build up the microscopical irregularities that exist on all bearing surfaces and form a veneer-like coating of the greatest possible smoothness and endurance.

ABOUT all the ills an automobile, or any other machine, is heir to, come from bad lubrication.

DIXON'S graphite publications sent free upon request.

THE PENCIL TREE

By LAURA E. RICHARDS

Oh, could I find the forest
Where the pencil trees grow!
Oh, might I see their stately stems
All standing in a row!
I'd hie me to their grateful shade,
In deep, in deepest bliss;
For then I need not hourly hear
A chorus such as this:—

CHORUS

Oh, lend me a pencil, please, mamma!
Oh, draw me some houses and trees, mamma!
Oh make me a floppy
Great poppy to copy,
And a horsey that prances and gees, mamma!

The branches of the pencil tree
Are pointed every one;
Aye! each one has a glancing point
That glitters in the sun.
The leaves are leaves of paper white,
All fluttering in the breeze;
Ah! could I pluck one rustling bough,
I'd silence cries like these:—

CHORUS

Oh, lend me a pencil, do, mamma!
I've got mine all stuck in the glue, mamma!
Oh, make me a pretty
Big barn and a city,
And a cow and a steam engine, too, mamma!

The fruit upon the pencil tree
Hangs ripening in the sun,
In clusters bright of pocket-knives,—
Three blades to every one.
Ah! might I pluck one shining fruit,
And plant it by my door,
The pleading cries, the longing sighs,
Would trouble me no more.

CHORUS

Oh, sharpen a pencil for me, mamma!
'Cause Johnny and baby have three, mamma!
And this isn't fine,
And Hal sat on mine,
So do it bee-yu-ti-ful-lee, mamma!

—American Primary Teacher.

(Copyright, 1899, by Little, Brown & Co. Used by permission.)

THE THREADS of spark plugs on motor cycles and automobiles should have a graphite grease, or graphite and oil, applied to them before being screwed in. Otherwise it is more than likely that they may be broken or damaged in an attempt to remove them.

A most highly recommended article for this purpose, and in fact for all threaded parts, is Dixon's Graphite Thread Compound.

FORMULA FOR MAKING GOLD WHICH ANYONE MAY USE

For melting purposes of all kinds, Dixon's Crucibles are the recognized standard, as will be seen by reference to the following item which we clipped from the *New York World*.

Place in a crucible, Dixon Black Lead preferred, the following ingredients: Five A. T. antimony, ground to a mesh of 100 fine; two A. T. card teeth or piano wire; two A. T. lamp-black or other carbon; cover with caustic soda; lute on cover with ashes and fire clay; bind with strong steel wire. Place this in furnace at not less than 1,300 Fahrenheit for one hour. Though antimony suffuses at 900 Fahrenheit, five A. T. of antimony will be found in a button. Grind this to 100 mesh just as you would for any ordinary assay; then dress with c. p. test lead and scorify and cupel. The result will be a bead of almost pure gold, though perhaps a little silver will be found with the button. This is parted in the usual way and the amount of gold determined.

—AUSTIN GRANVILLE in *New York World*.

AN UNPLEASANT TENDENCY

It gives a married man the chills
And chronic blues
When marriage merely runs to bills,
Instead of coos.—*Pittsburgh Post*.



What Do You Use on Pipe Connections?

If you want a material that will make tight joints and yet permit of easy disconnecting, use

DIXON'S PIPE JOINT COMPOUND

on your pipe connections. Saves time, fittings and tools when joints are wanted open. This compound is also unaffected by acids or alkalis—try it out on the next job.

JOSEPH DIXON CRUCIBLE COMPANY
JERSEY CITY, N. J.

A MECHANICAL MINSTREL JOKE

In looking over an old number of *Power* the other day, we came across a joke having for its victim Professor Jacobus, who is an acknowledged authority upon the flow of liquids through pipes, and upon the loss of hydraulic head due to elbows, valves, orifices and the like. The joke is mellow with age, but it seems good enough to resuscitate. So here it is, with our apologies to the professor.

Imagine yourself, if you please, at a minstrel show.

"Dat Professor Jacobus is a nice man," says Tambo, the end-man.

"Yes," says the interlocutor, "I think Professor Jacobus is a very nice man."

"Now me and him was talking dis afternoon," continues Tambo, "down in the bar-room; and—"

"What's that?" cries the horrified interlocutor. "You were talking to Professor Jacobus down in the bar-room?"

"Yassir, an' he says—"

"But you are surely mistaken. Professor Jacobus is a very serious minded and sober man. He could not possibly have been down in the bar-room."

"No, I ain't mistaken. He was thar all right, but he had a good right to be thar."

"He had a right to be there, did he? Well, what was Professor Jacobus doing in the bar-room?"

"He was collecting data on the loss of head due to the flow of a liquid through an orifice."

A TALK ON DIXON'S SILICA-GRAPHITE PAINT

By OTIS K. STUART

A paint consists of two parts: First, a vehicle, which is the liquid part of the paint; and secondly, a pigment, which is the solid part of the paint.

First.—The vehicle in practically all forms of carbon paint is linseed oil, either boiled or raw. The Dixon Crucible Company uses boiled linseed oil because it has found by actual conclusive tests that the paint "sets," or, in other words, dries sufficiently for second coat purposes more rapidly when boiled, rather than when raw linseed oil is used. The better the quality of the linseed oil, the more elastic and impervious will the paint be and the Dixon Crucible Company uses the finest quality of linseed oil it can buy.

Second.—There is a large variety of so-called "carbon" used as pigments. Lamp black is one form known to all. The difficulty with a lamp black paint is that it dries very slowly. This is probably due to the fact that the particles of the lamp black are extremely minute, but no matter what the cause may be, the fact is certain and therefore, for practical reasons, lamp black is not often used as a pigment by itself. It is almost always combined with some other substance. We believe graphite to be a better substance than lamp black, because it is almost as pure a form of carbon as lamp black; it can be almost as finely divided as lamp black; it is at least as water-repellent as lamp black; it is considerably cheaper than lamp black; and it allows the oil to "set," or dry sufficiently for a second coat, more rapidly than lamp black.

The pigment in Dixon's Silica-Graphite Paint consists of graphite and silica, in about equal proportions. In other words, while our paint is a carbon paint, it is not purely a carbon paint. It is a carbon-silica paint.

The form of graphite used is that found at the Dixon Company's mines at Ticonderoga, N. Y. It is known in the trade as "Flake" graphite. It is a crystalline graphite, which can readily be separated or divided into extremely thin, minute "flakes," and it possesses the physical characteristic of "toughness" as a distinguishing mark from all other forms of graphite.

We use this particular form of graphite, not because it is cheapest (for it is by no means the cheapest), but because it is the best, as we have found from long experience. We believe the reasons why it is the best are, first, because of the thinness of the "flakes," and secondly, because of the toughness of the material. The United States government, after a very thorough examination of various brands of crystalline graphite, made the statement that the Ticonderoga Flake is on the average only about $\frac{1}{4}$ as thick as the thinnest of other flakes. This same form of flake graphite has been found to be the best solid lubricant known.

We do not make our paint pigment wholly of graphite, because a better pigment is made of graphite and silica. Silica in some countries, notably England, is used extensively as a paint pigment, and it has some unique and valuable properties as such. It is tough, it is inert, it is anti-lubricating in its nature. If the pigment in our paint were made entirely of flake graphite, the paint would be so easy to apply that it would be almost impossible for the ordinary painter to put on a coat of sufficient thickness to protect the surface. The addition of the silica to the pigment renders the paint less easy of application, and this is a valuable factor in the practical use of the paint. It insures a coat of sufficient thickness to protect the surface.

The great enemy of steel is rust. When air and water come into contact with iron or steel, the result is rust. It is absolutely necessary, however, that both air and water come into contact with the metal in order to develop rust. The reason why a steel surface is painted is that it is presumed that the paint will keep water and air from coming into contact with the metal and any paint which will accomplish this, is a protective paint. The reason why linseed oil is used as a vehicle for protective paints is, that when it dries it is practically impervious to water and air. "Why not," it might then be asked, "simply paint steel surfaces with a coating of linseed oil?" Well, this is done in some instances; but the difficulty is that linseed oil is disintegrated by the actions of certain substances usually found in the air or in rain, such, for example, as ammonia, and the consequence is that the linseed oil is rapidly destroyed. The reason why a pigment is used in a paint is, therefore, apparent. It is to act as a protector to the linseed oil vehicle. The linseed oil vehicle is the real protector of the metal, and the pigment is the protector of the vehicle. If the pigment does not protect the oil, it is of no use; if it hastens its disintegration, it is worse than useless.

It is apparent then, that there must be no chemical affinity between the linseed oil vehicle of a paint and the substances used as pigment. In Dixon's Silica-Graphite Paint the pigment is absolutely inert. Neither silica nor graphite is affected by acids or alkalies, or any atmospheric influence. Nor is there any chemical action whatever between the graphite and the silica; nor between either of these substances and the linseed oil. In other words, a paint skin, or paint film of Dixon's Silica-Graphite Paint undergoes absolutely no change

whatever, except that change which the atmosphere produces on the linseed oil vehicle. The particles of graphite and the particles of silica in the paint remain permanently unchanged in size and form and I believe it may be stated as a "law," that the durability of a paint is a function of the permanency of the paint film. This is the prime essential in a protective paint—the feature for first consideration, and unless a paint possesses this feature of "permanency," it cannot truly be considered protective.

Linseed oil dries, not by evaporation, but by absorption. This, of course, is apparent from the fact that a linseed oil film weighs more after it is dry than before, whereas a liquid that dries by evaporation will, of course, weigh less after it is dry than before. Linseed oil absorbs oxygen from the atmosphere, undergoing a chemical change which is called "drying." Now, a carbon pigment retards this action of absorption by simply preventing the atmosphere from getting at the linseed oil. This is the most important function of the pigment of a paint, for the point at which a paint begins to fail is at the moment when the linseed oil has all finally become dry. It is entirely possible to make a paint containing so much lamp black that the paint film would never dry. It is, of course, apparent that the physical characteristics of a paint, which prevent air and water from reaching the painted surface, also prevent the air from reaching the oil film lying between the pigment and the metal surface. This substratum of oil which absorbs oxygen with extreme slowness, is the most valuable portion of a paint film so far as its protective merit is concerned, and graphite, because it can be so finely divided, and because of its high percentage of carbon, is one of the very best protectors of this substratum of oil in a paint film.

THE SIMPLE DEATH

Little jabs of Doctor,
Little grains of pus,
Make the vaccination
And the tetanus.—*Life*.

ANXIOUS TO UNDERSTAND

Ironmonger (to customer, just entering): "Good morning, sir."

Customer: "I want one of those things that you fasten on a door to make it shut itself."

Ironmonger: "Oh, yes, an automatic door-closer?"

Customer: "That's it; and not too high-priced."

Ironmonger: "Yes sir; a cheap automatic door-closer."

Customer: "And not too complicated, either."

Ironmonger: "I understand. You want an automatic door-closer of simple design and small cost?"

Customer: "Exactly. But not one of those confounded things that slam the doors to with a bang."

Ironmonger: "That would be a nuisance, of course. You want an automatic door-closer of simple design, small cost, and with an easy spring?"

Customer: "That's right. But I don't want it to close the door too slowly, either."

Ironmonger: "Briefly, what you are looking for is an automatic door-closer of simple design and small cost, that is neither too slow nor too fast?"

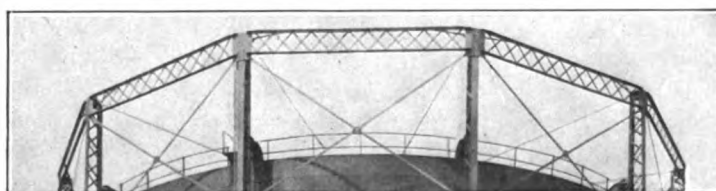
Customer: "That's all right. And, besides, it mustn't be like some I have seen, where a man needs the strength of an ox to open the door."

Ironmonger: "Now, let us understand each other. You want to buy an automatic door-closer, simple, cheap, neither too slow nor too fast, and easily operated?"

Customer: "Correct. Show me one."

Ironmonger: "I'm very sorry, sir, but I don't deal in automatic door-closers."—*Canadian Manufacturer*.

OILS and greases may come and go, but Dixon's Flake Graphite goes on almost forever. The thin flakes of Dixon's Ticonderoga Graphite build up the microscopical irregularities of bearing surfaces and form a veneer-like coating of graphite that has marvellous smoothness and endurance.



BULLETIN 190-GAS FREE

This is a little brief for Dixon's Silica-Graphite Paint on gas holders. As evidence in point it shows the largest gas holder in the world—of course Dixon's Paint was used on it. Write for the 190-Gas Bulletin.

JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.



GRAPHITE

VOL. XIII.

JUNE, 1911.

No. 6.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

PORTO RICO

Few people realize that the United States possesses a tropical country, the beauty and richness of which has no superior and few equals, yet Americans are now becoming better acquainted with its charms and beauties of climate and scenery. No other island with its area is endowed with more scenic beauty, greater fertility of soil or more numerous and certain elements of prosperity.

The location of Porto Rico in the Tropics is within easy reach of the large cities and great markets of the Eastern States. Its delightful climate, its unsurpassed views of mountain, valley and sea are beautiful beyond description. The romance, quaint attractiveness and historic interest of its ancient forts, churches, cathedrals

and bridges—all made accessible by a magnificent system of roads extending around and over the island, which has been in course of construction for half a century—offer great natural attractions to the tourist.

Porto Rico has an area of 3,606 square miles and over 1,120,100 inhabitants.

It is about 1500 miles from New York, and about 100 miles in length east and west with a breadth north and south of about thirty-five miles.

Geologically the Island of Porto Rico is of profound interest. The island is one of the summits of the great range of submerged mountains that rise from immense depths of that part of the Atlantic Ocean. The West Indian Islands which include Cuba, Porto Rico, Haiti and Jamaica, are only the protruding tips of the mightiest and most precipitous mountain range in the world, that rises from the bottom of the ocean 27,000 feet to the mountain summits above sea level. The mountain rise in Porto Rico has an average elevation of 2,500 feet terminating in El Yunque, the highest in the island, with the summit 3700 feet above sea level.

The average temperature for the island, combining the records of different stations, is seventy-six degrees. During the coldest month of the winter season the average is seventy-three degrees, and during the warmer months of the summer it is seventy-nine degrees. The average rainfall for the entire island is 77.30 inches. The rainfall varies greatly, the average rainfall on the south coast being forty inches.

Since the occupation by the United States, the island has made enormous strides. Today there are 1025 school houses on the island, where under the Spanish occupation there was only one school house on the island which was built for that purpose. At the time the Americans took possession of the island, there were not 28,000 children at school, where today there are 121,000 children at school. The death rate has been reduced from almost thirty-two to twenty-two per thousand.

Imports and exports have increased tremendously, and under the business-like administration of Governor Colton the island is not only prosperous but promises even greater prosperity.

The Register of Porto Rico for 1910, which was prepared and compiled under the direction of Honorable M. Drew Carrel, Secretary of Porto Rico, and which may be obtained from the State Department of the United States, is a book replete with most interesting information and many beautiful illustrations.

HOW THE AIR-BRAKE FIRST WAS USED

The air-brake, writes Paul Latzke in *Everybody's*, was ushered into actual use in most dramatic fashion. The trial trip occurred in April, 1869. The train selected was the Steubenville accommodation running between Pittsburg and Steubenville, Ohio. When the train was going at full speed, suddenly, as he came around a sharp curve, the engineer saw a stalled wagon in the middle of the track dead ahead. With hand-brakes only, nothing could have prevented a terrible smash-up. The formal time for the trial of the air-brake had not come, but the brake was there, and in desperation, not believing for a moment that the thing could possibly avail, the engineer threw on the air. But it did avail. The observers in the rear were almost catapulted out of their seats by the shock of the sudden stop. But when they saw the engine fairly poking its nose into the wagon-bed, so narrow had been the margin between safety and disaster, they forgot all about their shock and stood in awed silence.

NOW AND then we hear of some tourist purchasing a much wished for article in Paris, or some foreign city, only to find later on that the article is stamped with the name or trade mark of some American manufacturer. We are reminded of this on receiving from London a letter addressed "GRAPHITE, London," requesting the forwarding of "two rate cards as the same will probably be needed in making up an advertising campaign from time to time."



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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CURVE GREASE

What is more disagreeable than to be in a car, or for that matter, anywhere in the vicinity, when a car is taking a curve and there is no lubricant on the rail? It seems as though Bedlam has been turned loose. Those piercing squeals are cries for lubrication and should be heeded just as though coming from one in distress, for the rail and wheel flange are being cut at an alarming rate. When the Dixon Curve Greases are used there are no squeals and the rail and wheel flanges show a long life under most trying conditions.

There is quite often a disposition to feel that no lubricant or the use of inferior lubricants is economy, but this is the practice only of the penny-wise and pound-foolish.

Did it ever occur to you that the principal cost of applying a curve grease is the labor cost and not that of the grease itself, so if you can get a grease that will far outlast another at a reasonable price, it is not fair to expect a big saving in the cost of lubrication? This the Dixon Graphite Curve Grease accomplishes.

As hinted in the above, the Dixon Greases are not cheap ones (that is in first cost), but are greases prepared after careful consideration of the service required and are not compounded from by-product slush. They are waterproof and have exceedingly long lasting qualities.

Having at our command unlimited sources of supply, we are able to produce greases for rough work and sell them at a price which is unequalled.

In proof of the above, we would say that some of the largest traction and railroad companies in the country are buying the Dixon Graphite Curve Grease, because they find it economy to do so, not only in the actual amount spent for lubricants, but in the amount spent in the "up-keep" of the equipment as well.

The Dixon Curve Greases are prepared in two consistencies; heavy, for summer, and a lighter form for winter use. Unless otherwise specified, we always fill orders with the heavy bodied grease.

A word in regard to center plates and side bearing lubrication. Authorities have agreed that dry center plates and bearings are sometimes the cause of broken wheel flanges, rails and the loss of much power. When these parts are properly lubricated, however, the train is much more flexible and the wear occurring at curves is greatly reduced, so don't overlook the importance of giving center and side bearings the proper attention.

MANHOLE GASKETS

Mr. E. L. Morris, of Salem, Va., tells in *Power* how to use the same gasket twenty times or more without leakage.

Dixon's Ticonderoga Flake Graphite solves many a problem.

Perhaps my method of putting manhole gaskets on manhole plates will be of interest. I take any good make of $\frac{5}{8}$ inch round gaskets for the manhole, but, before using, the plate is cleaned with a sharp tool, and a mixture of either red or white lead and boiled linseed oil with a consistency of a thick paint is applied to cleaned surface. The gasket is cut to the proper length and the lead tube inserted in both ends and the joint taped.

Then a coating of graphite and cylinder oil is applied on the exposed side of the gasket and the plate is then placed in position in the manhole.

Before removing the plate again, I take a sharp tool and mark it so as to always replace it in the same position.

When removing the plate the gasket will stick to it, and it is only necessary to trim off the overhanging parts of the gaskets and apply a coating of graphite and cylinder oil before replacing it.

I have used this method for many years with success and have used the same gasket twenty times or more, without leakage, before replacing with a new gasket.

E. L. MORRIS, Salem, Va.

DIXON'S graphite publications sent free upon request.



DIXON'S GRAPHITE STOPPERS, NOZZLES AND SLEEVES

The recent unavoidable accident at the plant of the Midvale Steel Company, resulting in the death of seven men, which according to the Coroner's investigation was found to have been caused by a defective releasing plug, or stopper, leads us to call attention to the fact that though a stopper is a small tool, it carries a great responsibility. On its integrity depends the safe flow of usually from fifteen to sixty tons of molten metal, also the safety of the men handling the metal.

The stopper maker should use the best skill and the best materials. The stopper user should be willing to pay a fair price, which at the best, is but a few cents each. Stoppers cannot be made of materials too good, and the user should if necessary, be willing to pay even twice as much for them as he is now asked.

The Dixon Stopper, as made today, is a vast improvement over anything heretofore made. We have given the matter intelligent study, have made many experiments, and furnish a stopper which for quality has no rival. It is only fair to us to say it was not a Dixon Stopper used at the Midvale Plant.

The above illustration gives an exhibit of some of the standard sizes, shapes and types of Dixon Stoppers, Nozzles and Sleeves, showing the different sleeve attachments, the different methods of bolt heads, also an exhibit of nozzles made to fit the standard types and sizes of stoppers.

At the present time we have over one hundred different molds for the manufacture of stoppers, so that from among them it is not difficult to find a stopper to suit almost any condition. We are always glad to make special shapes and sizes that may be desired, though to minimize detail and to secure prompt shipments it is to the advantage of the buyer to select one of the styles carried in stock by us.

A HELPFUL AND USEFUL EXERCISE

A very excellent exercise for the muscles of the hands and arms, is to take a good sized piece of ordinary newspaper, crumple it up in the form of a ball, and then with the hand keep on squeezing it into a still smaller ball. The exercise will be found very strengthening to the muscles of the hand and arm, and one or two hands may be used.

A BANK PRESIDENT GOES FISHING

And on His Return to His Desk from a Successful Fishing Trip
Issues a Notice to the Cashiers of the Hundred Banks of
which He is President or Financial Agent Urging
the Use of Dixon's Pencils

Mr. W. S. Witham of Atlanta, Ga., who is president or financial agent of one hundred banks in country towns, made a fishing trip to Florida and visited the Dixon cedar mill, and incidentally sampled a number of the Dixon Pencils.

As might be expected from a man who can successfully run a hundred banks, he recognized a good thing in lead pencils and on his return issued the following letter to his many cashiers.

DEAR CASHIER:—

I have just returned from a fishing trip to Florida.

I gave a leisure hour to PENCILS. Yes, to PENCILS such as you buy and use by the hundreds.

The JOSEPH DIXON CRUCIBLE COMPANY has a mill at Crystal River, Fla., and they make as many different kinds of pencils as there are fish in the sea.

From all I have learned about pencils, I want to urge that on and after receiving this letter YOU USE NOTHING BUT DIXON'S PENCILS in your bank. "ASK THE MAN FOR DIXON'S PENCILS."

The main office of the Dixon Company is in Jersey City, N. J.

When buying a quantity of pencils they print the name of your bank on them. They make all sizes, cuts and shapes.

They make one called "AMBASSADOR,"
Entirely free from every flaw.

One kind they call "BEGINNERS,"
Used both by Saints and Sinners.

This is a pencil of the largest size,
And for schools it took the prize.

Educators say it is the best in the land,
Preventing cramps in children's hands.

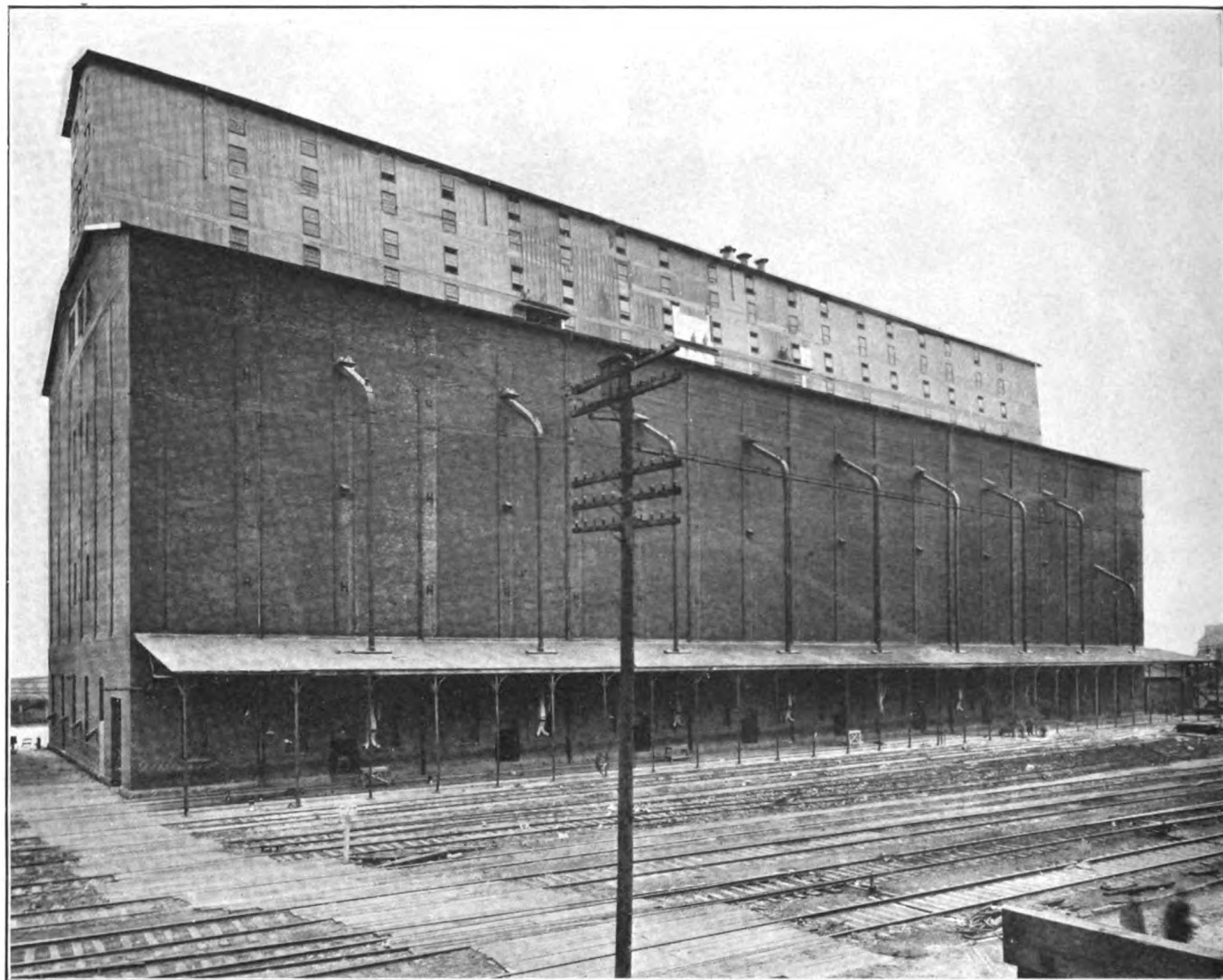
One is Dixon's ANGLO-SAXON,
The best made since the days of Jackson.

Say—buy and use only DIXON'S PENCILS.

This letter goes to our hundred offices as a PERSONAL from

Yours truly,

W. S. WITHAM.



MUTUAL TRANSIT ELEVATOR, BUFFALO, N. Y.

We reproduce a photograph of the largest elevator in Buffalo, which was first painted in 1902 with Dixon's Silica-Graphite Paint, and after eight years of service was repainted in the Fall of 1910; Dixon's Natural Color being again selected for protection of all exposed metal work. We are proud to add this to our list of long service records.

Careful workmanship in applying paint has more to do than one would think, for securing satisfactory results, and we are glad to say that the Jacob Schmahl Company, contracting painters of Buffalo, applied the paint.

ECONOMY IN LEAD PENCILS

A manufacturing concern discovered that during the year it had used what to them seemed an exceedingly large number of lead pencils. After looking carefully into the matter of



envelopes, pins, clips, pens, ink, etc., they came to the matter of lead pencils.

Now a lead pencil is seven inches in length, but it was found that the majority of clerks discarded a pencil after three inches of it had been used, and very few indeed will use a

lead pencil after it is worn down to three and one half inches in length. This means that one half the yearly pencil money, or probably \$300.00 in this particular case, went to waste.

To remedy this waste, the firm furnished and insisted on the use of a pencil lengthener which cost but little and enabled clerks to use a pencil down to the last two inches and in forcing this rule to use the pencil lengthener, effected a saving of over \$100.00 a year. The illustration shown herewith is Dixon' Pencil Lengthener No. 456.

DIXON AT PITTSBURG

Our readers who expect to attend the coming "Smoky City" Convention of Foundrymen and Manufacturers (May 23rd to June 1st) are cordially invited to visit our booth.

The Dixon booth is very conveniently located (Section P), being close to the main entrance of Convention Hall and fronting the clear space where visitors will naturally congregate. Our Messrs. Johnson, Krug, Condit and Brandon will be in attendance. Souvenirs of Japanese Water Flowers will be distributed.

WHEN the warm sun that brings
Seed-time and harvest, has returned again,
'Tis sweet to visit the still wood where springs
The first flower of the plain.—LONGFELLOW.



Union Bridge Company's Highway and Trolley Bridge over the Hudson River, Connecting Waterford and Upper Troy, N. Y.
Painted with Dixon's Silica-Graphite Paint

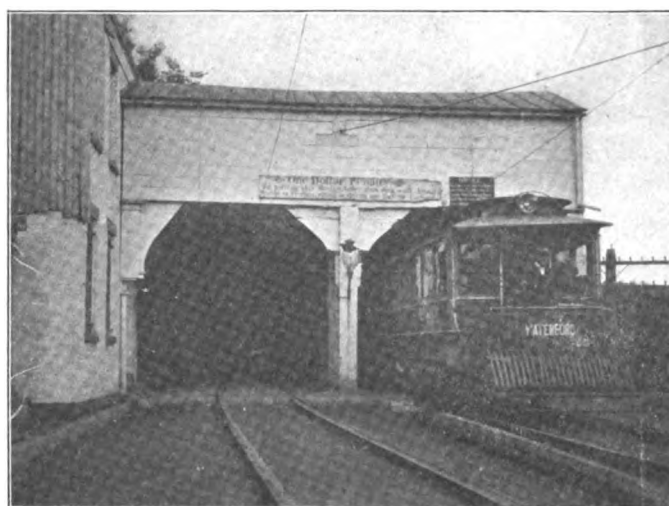
On July 10, 1909, fire destroyed the Burr Bridge, which was the longest wooden bridge in America. It was a four-span structure with a total length of about 750 feet, and was built in 1803. At the time of its destruction, this wooden bridge was in excellent condition. It is this noted structure that the present Waterford Bridge replaces.

Boller & Hodge, of New York City, were the consulting engineers and the steel work was fabricated and erected by the Phoenix Bridge Company of Phoenixville, Pa., and painted by Mr. George MacLaurin, contracting painter, of Philadelphia. The structure is now owned by the Union Bridge Company, Mr. Thomas A. Knickerbacher, president, through whose courtesy we are able to reproduce the photograph.

One of the young salesmen attached to the Atlanta, Ga., branch of the Joseph Dixon Crucible Company, while in a small town in the "mountain dew" part of Georgia stepped into a store with the remark, "I want a cigar and I don't want one of those weeds that burn out in no time at all. I want a good long smoke."

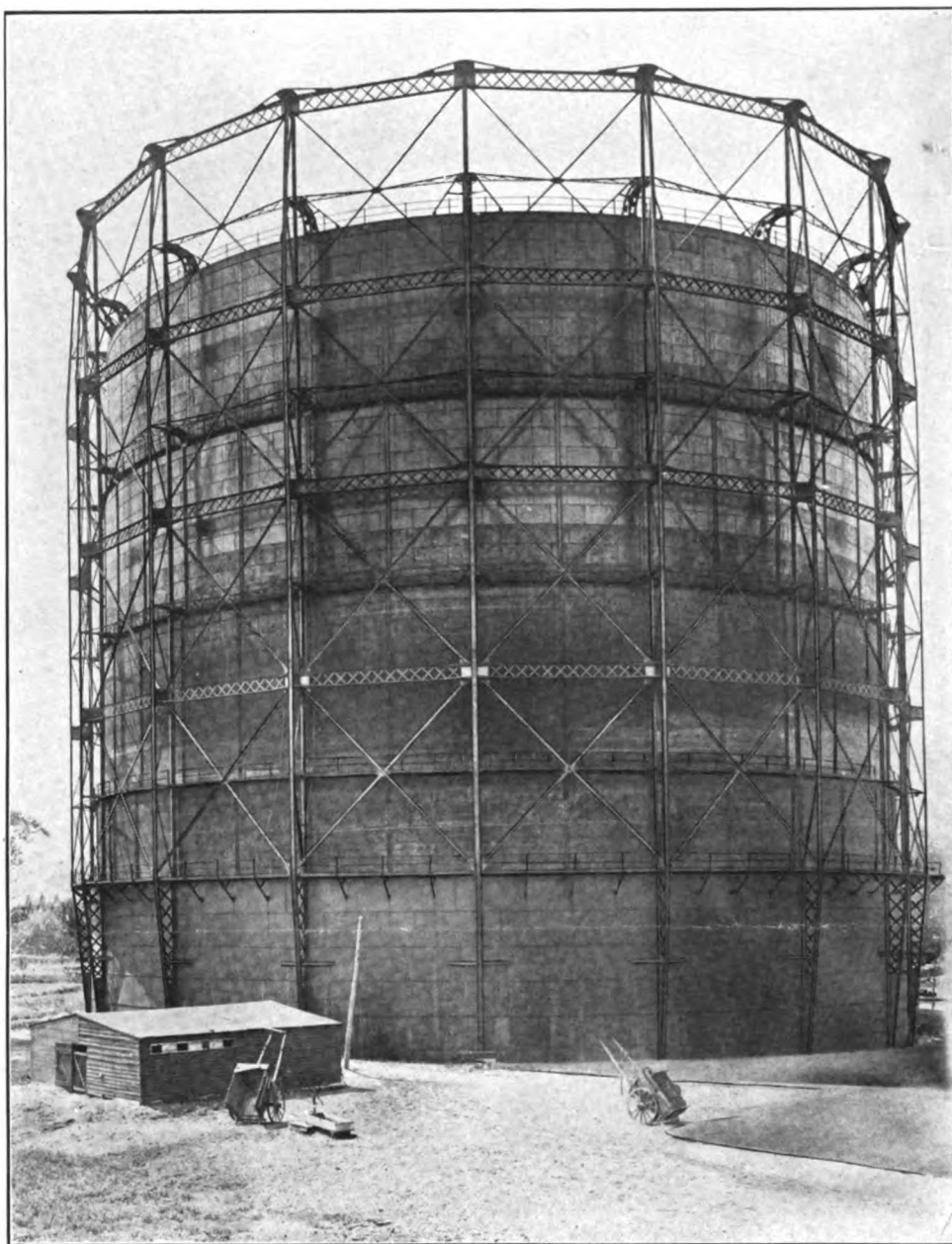
He was promptly handed one and as the money was passed over, the proprietor said, "Mine friendt, dot cigare vill last you till you was sick of it."

DIXON'S graphite publications sent free upon request.



ENTRANCE TO OLD WATERFORD BRIDGE,
BUILT 1803

The curious old sign above and to the left of the trolley car reads: "One dollar penalty for paffing this bridge fafter than on a walk by any Perfon or Perfons, riding or driving any Horfe or carriage." (Photograph owned by W. A. Steckel, Roadmaster, Beebe System of Trolley Lines, Syracuse, N. Y.)



INDIANAPOLIS GAS COMPANY'S HOLDER

We show above illustration of the gas holder of the Langsdale Avenue Plant, Indianapolis Gas Company, of which Mr. Henry Rochat is superintendent.

This enormous holder, containing 3,000,000 cubic feet, standing 167 feet high and having a diameter of 170 feet, is painted with Dixon's Silica-Graphite Paint.

Dixon's Paint is giving the same remarkable satisfaction in protecting gas holders as it has in the preservation of other steel surfaces, such as bridges, standpipes, smokestacks, grain elevators, etc.

Dixon's Paint is not affected by gases, acids, water or weather conditions. For gas holder requirements Dixon's excels in every respect.

"Go, till the ground"—said God to man;

"Subdue the earth, it shall be thine."

—MRS. HALE'S POEM.

DIXON'S graphite publications sent free upon request.

DIXON'S CRUCIBLE CLAY AND GRAPHITE MIXTURE FOR PATCHING CRACKS IN INGOT MOULDS

We have had brought to our attention the excellent results obtained by the use of the Dixon Crucible Clay and Graphite Mixture for patching up cracks that appear in ingot molds.

We would be glad to furnish detailed information to those who are interested.

BOILER AND FLYWHEEL EXPLOSIONS

Now and then through the daily paper the public hears of some boiler explosion, but few probably know how many boiler or flywheel explosions there are during the year.

During 1910, according to reports that have come to us, there were 533 boiler explosions and 67 explosions of flywheels; total number of killed and injured in these explosions nearly 1000.

We do not find in the report any statement as to causes of the explosions.



RESIDENCE AT GLEN COVE, L. I.

The photograph shows the new residence at Glen Cove, L. I., of Captain J. M. DeLamar, now under construction. The building is 150 feet long, 100 feet wide and three stories in height, and is fire-proof throughout, the floors being of steel and terra cotta.

The structure contains approximately 250 tons of structural steel, an exceptionally large tonnage for this class of construction. All of the structural steel and ornamental iron was painted two coats of Dixon's Silica-Graphite. The steel contractor for this work was Fitzpatrick & Coombs, of New York City.

AN APPRECIATION OF MERIT

At the last convention of the Railway Engineering and Maintenance of Way Association held in the Chicago Coliseum, our Mr. H. W. Chase had a very interesting conversation with Mr. H. E. Daniels, now with the West Disinfecting Company, but who was formerly a locomotive engineer on one of the largest lines in the East. Mr. Daniels spoke very highly of the Dixon Flake Graphite as a steam cylinder lubricant and we believe our readers will be glad to know his opinions since they are the result of seven years practical experience.

He frequently purchased graphite at his own expense, as he believed the small amount involved was more than justified by the beneficial results obtained as well as by the sense of security derived from being prepared for the inevitable occurrences, such as hot pins and other friction troubles, which can not be easily remedied with a liquid lubricant. A practice which he considered of inestimable value in securing the smoothest and most efficient operation of the working parts of a locomotive, was to introduce one or two tablespoonfuls of dry flake graphite to the valves and cylinders through the relief valves after condensation had been worked out in getting away from the engine house or storage track. By giving the engine a start and then allowing it to drift with the steam shut off, the suction at the relief valves would quickly draw the graphite into the steam chest. Where relief valves were

not applied to the engine, graphite was administered by mixing with a small quantity of valve oil and pouring it through the oil pipe by disconnecting the union at the steam chest connection. Graphite should never be fed through an ordinary gravity lubricator. Some of the best and fastest runs he ever made on the Limiteds were when flake graphite was applied to the valves before starting out.

Mr. Daniels states that while his method may perhaps be open to argument, it is his honest opinion that the increased beneficial results are overwhelmingly in favor of graphite and that not only increased speed can be obtained, but that in freight service a locomotive will handle at least five per cent additional tonnage more economically and satisfactorily by its judicious use. He also found that the graphite kept the smoke arch and boiler head in a nice, clean condition.

GASOLINE

We wouldn't be speaking far from the truth if we call this an age of gasoline.

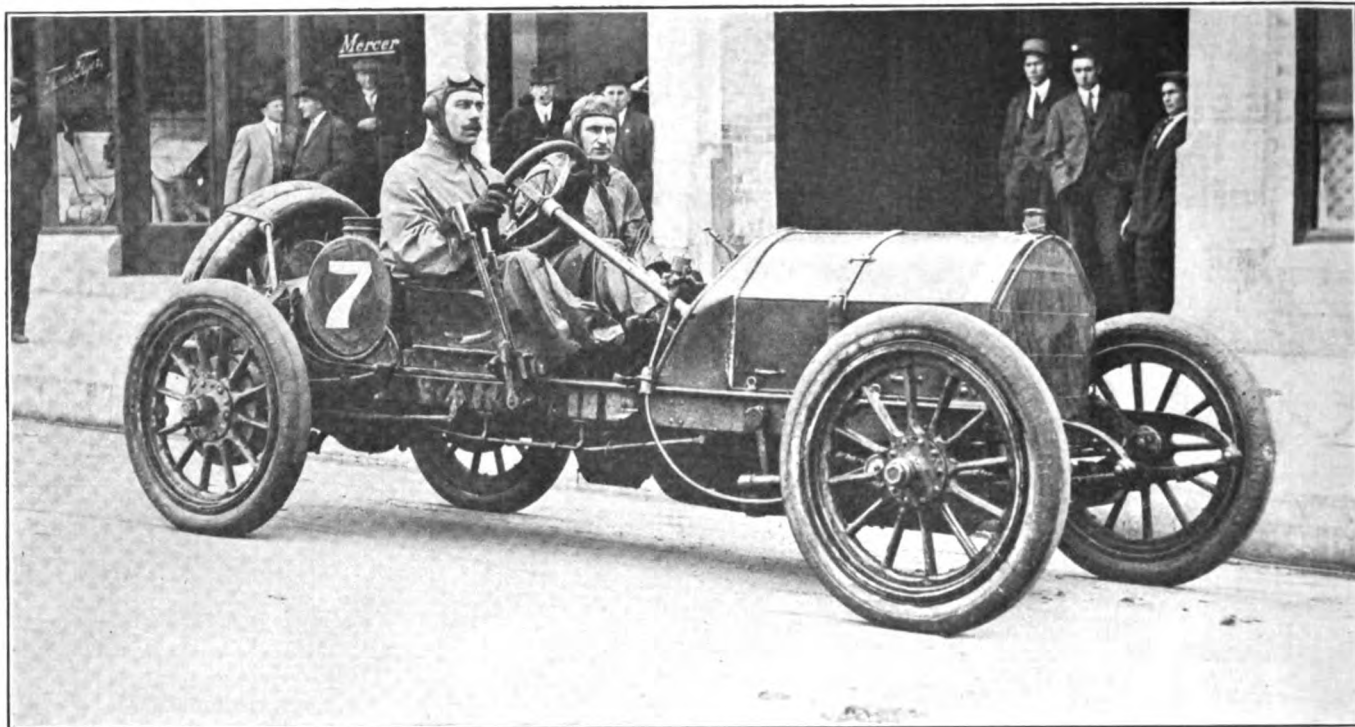
In the year 1910, there were 38,000 more internal combustion engines using gasoline west of the Mississippi River than during the year 1909; and during January 1910 there were 658,000 more barrels of gasoline sold than during the same period for 1909.

The consumption of gasoline for 1910 was approximately 9,600,000 barrels as reported by the Bureau of Statistics, Department of Commerce and Labor of the *National Petroleum News*.

USING PACKING FOR STUFFING-BOXES

An engineer recommends the following packing for stuffing-boxes for steam, hot water, cold water or ammonia.

Get two lead gaskets, then make a mixture of Dixon's Flake Graphite, sawdust, lead shot and lubricating oil mixed to a consistency of very thick putty. Put in the stuffing-box one of the lead gaskets, then put in the putty, and follow with the other lead gasket. Adjust as desired and you will be pleased with the result, so says our engineering friend.



IN FAST COMPANY

On Washington's Birthday, February 22, the big Oakland Panama-Pacific road race was run over the Alameda County boulevard course between San Leandro and Hayward, California. These races were undoubtedly the most thrilling exhibition of motor car racing that the Pacific coast has ever seen and perhaps did more to test the durability of the cars entered than has any other road race in America. In spite of four right-angle turns in the course and inadequate police protection, which called for unusual care on the part of the drivers, better time was made than at the last Vanderbilt cup race. So successful was the event that plans are being considered to make the contest an annual affair that will be the blue-ribbon event of the West.

The program was divided into three events; a light-car race and a heavy-car race and the free-for-all.

The race for light stock cars was easily won from his four competitors by C. H. Bigelow, driving a thirty horsepower Mercer. His time for the 98.3 miles was one hour, forty-two minutes and fifty-four seconds, or a little better than a mile every sixty-three seconds. Many miles on the straightaways were covered at less than a mile a minute rate, which is a remarkable pace for so light a machine.

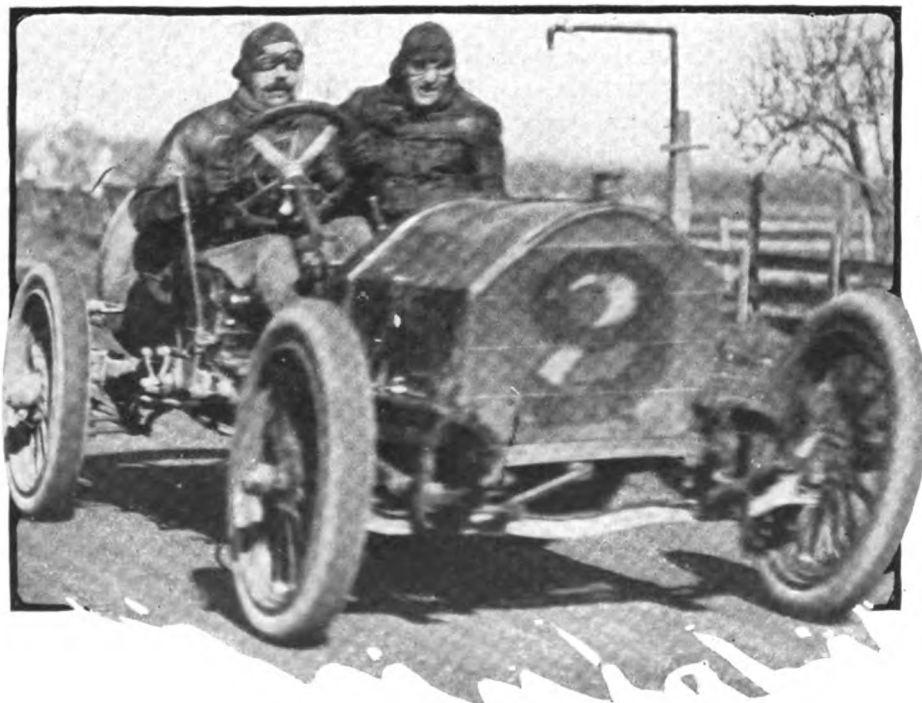
Mr. Bigelow, whose photograph is shown above, is not only connected with the Mercer Automobile Company in the racing game, but also has entire charge of all their branches on the Pacific coast. He has kindly permitted us to reproduce the following letter in which we believe our readers will be interested.

Feb. 25, 1911.

*Joseph Dixon Crucible Co.,
145 Second Street,
San Francisco, Cal.*

GENTLEMEN:—Replying to your inquiry relative to my experience with Dixon's No. 677 Graphite Automobile Lubricant in my Mercer racing car, will say that I used it first in the Los Angeles to Phoenix race in my transmission, and without washing out used the same grease in the Santa Monica and the Panama-Pacific road races.

Our transmission is mounted in Timken roller bearings. I have had considerable trouble in the past, due to the rollers freezing and as a result flattening on the side. I find that Dixon's Graphite lubricant practically eliminates this difficulty.



After my experience in the Phoenix race with Dixon's No. 677 as a transmission compound, I put it in my differential and have been very much pleased with the result attained. It remains in place better than most other greases and I find that sufficient adheres to the bearings and gears to provide perfect lubrication even when the level in differential housing becomes lowered to a point that the gears do not dip. The graphite already carried upon the gears insures perfect lubrication. I consider this a very strong point, as it does away with the constant trouble arising from greasy brakes due to the necessity of running a differential swimming in oil.

All told, my experience has been such that I expect to continue to use your No. 677 and have recommended it to our factory for the initial filling of stock cars.

Yours very truly,
(Signed) C. H. BIGELOW.

BEFORE LAUNCHING

The time is now at hand when those who long for life on the raging main will eagerly push the nose of their craft away from land for a season of their favorite sport. Great preparations are being made to surpass last year's pleasures and supplies must be carefully selected.

Too great attention cannot be given to details by boat owners, for it is even more important on the water than on land that provision shall be made against all possible emergencies.

Many a pleasure cruise has been spoiled because a bearing in the power plant has "seized" or the engine refused to work. Such occurrences are sure indications that no Dixon Lubricant was used. Friction surfaces supplied with the Dixon Flake Graphite cannot seize because the presence of the softest, most unctuous solid lubricant known effectually prevents it.

Fine flake graphite, known as motor graphite, is extensively used as a cylinder lubricant or, mixed with oil or grease, as a general lubricant. Its function is to form a durable, practically frictionless veneer on bearing surfaces, thus increasing the service of the oil or grease and making overheating or cutting of bearings impossible. Special flake graphite greases are also prepared to meet every requirement.

Whenever lubricants bearing the Dixon label are found among a boat's equipment, you may know that materials have not been selected in a haphazard manner. The use of Dixon Graphite Lubricants about the power plant means continuous smooth running as far as friction troubles are concerned. They beget confidence in the boat to make extended trips without the common annoyance of drifting idly about every few hours to wait for a bearing to cool before proceeding farther.

Another interesting application of graphite is for the purpose of reducing the friction between the water and the surface of the boat's hull. Graphite imparts wonderful smoothness to a boat's wetted surface and is for this reason successfully used to increase the speed of pleasure boats, whether propelled by sail or power. It is moreover valuable as a filler for the grain of the wood, helping to prevent waterlogging on wooden craft of all sorts and aiding in the protection of the bottom.

We have a number of interesting booklets which will be sent free upon request.

DIXON'S graphite publications sent free upon request.



MANITOWOC, WIS., WATER COMPANY'S STANDPIPE

We are constantly claiming in our advertising, etc., that Dixon's Silica-Graphite Paint gives the longest service of any protective paint. The above photograph shows a standpipe which was painted over nine years ago with Dixon's Paint and has not been repainted since. The standpipe is in excellent condition today.

Dixon's Silica-Graphite Paint at first cost may be a little higher than other paints, but when it gives such a service as this, it is infinitely cheaper than other paints.

CURIOUS INSURANCE

Insurance has been made to cover almost every happening in England, such as the death of the sovereign, climatic conditions affecting the success of a pageant, a horse show, an agricultural fair, etc., and now a new form of insurance has been inaugurated which will enable persons whose holidays have been marred by rain to obtain, under certain conditions, monetary compensation. So writes Consul-General Griffiths of London.

Underwriters are prepared to insure against one-tenth of an inch of rain falling on more than two days a week at any towns on the south and east coasts of England between Bournemouth and Scarborough, where the daily rainfall is either officially published or where satisfactory records can be obtained.



HUNTINGTON-HOPKINS COMPANY

DIXON'S CARPENTER PENCIL

The above illustration shows a Dixon Carpenters' Pencil made for the old house of Huntington-Hopkins, of San Francisco, in February, 1876. This pencil was sent to us by Mr. V. Leu, who was in business in Vallejo at that time and procured it from the Huntington-Hopkins Company.

Mr. Huntington was the C. P. Huntington of the Central Pacific and Southern Pacific fame, and Mr. Hopkins was later the multi-millionaire and philanthropist.

The Huntington-Hopkins Company was bought out by Miller, Sloss & Scott in the early 90's and in 1898 was merged in connection with the Geo. W. Gibbs Company, which is now the Pacific Hardware and Steel Company, with which company we still do business.

The pencil in question still shows its gold stamping and the thirty-five years which have elapsed have made no very noticeable change in its appearance and certainly not in its good quality.

The date of its manufacture also represents the early times when the imprinting of pencils for individual houses was in its infancy, this particular branch of the business now having assumed very large and important proportions.

REFLECTIONS

From Various Trade Papers of the Month Relative
to the Uses of Graphite

The Automobile recommends a mixture of lard, camphor and graphite as an anti-rust paint to keep tools from rusting.

The Cycle and Automobile Trade Journal tells that that well-known automobile engineer, Mr. Charles E. Duryea, lubricated his engine cylinders with the Finely Powdered Dixon's Graphite No. 635, using no oil whatsoever. He found the lubrication all right, but as he did not get the compression wanted he abandoned the experiment; he is, however, a great believer in the use of graphite.

Automobile Topics recommends the heating and blending of old India rubber with grease and graphite as an excellent anti-rust lubricant for the leaves of the axle springs. Without doubt this would be good; but if the regulation thin, Ticonderoga Flake Graphite is used and flowed in between the springs by means of kerosene oil, we believe it will be found equally serviceable and possibly better.

The *Gas Review* tells how one engineer tried the use of flake graphite taken in through the air pipe, which made it possible for him to run with less oil. Many automobile drivers have tried this to their great satisfaction.

Gas Review also says that the value of graphite cannot be overestimated for use on the threads of pipes. Such pipes will unscrew easily after lying for years in the ground. Exhaust pipe couplings, cap screws and nuts will easily unscrew after being exposed to excessive heat for years if well coated with flake graphite, when screwed together. The writer stated that he could not close his article without saying a few words of praise of one of the best mineral lubricants known—graphite, and it so happens that all who have made

use of Dixon's Flake Graphite feel compelled to speak highly of it and to advocate it whenever they meet a fellow craftsman or engineer.

Power speaks of the experience of an engineer who decided to try graphite as a scale preventive. He found that when graphite is once in a boiler the circulation of the water carries it to all portions, and the graphite forms a thin coating on the metal which prevents the scale from forming.

For the first two weeks one pint of graphite was mixed with one gallon of water and fed to the suction of the pumps between the feed-water heater and pumps each day. At the end of two weeks the boilers were opened for cleaning and about 100 pounds of sludge were removed from the bottom of the boilers; this sludge contained considerable scale about $\frac{1}{8}$ inch thick, which appeared to be old scale from the back head. The boilers had been blown down twice a day and the amount of sludge recovered was about twice that recovered when using the compound.

The amount of graphite was then reduced to a pint every other day, and at the end of another two weeks the boilers were again opened and considerable white coating appeared on the surfaces which at first appeared to be new scale, but on close examination was found to be old scale with the outer surface dissolved. In some places the old scale came off in large pieces, showing that the boiler had been covered with a scale so hard that it had been mistaken for the metal.

At the end of eight weeks, one of the boilers showed but a few patches of scale. This boiler was nearest the pump and appeared to receive most of the graphite; however, the other is in as good a condition now, and both appear to be free from scale.

When the compound was used, the feed-water line had to be removed every two months and the scale cleaned out, but since using graphite the feed lines have not been taken down, nor does it appear necessary to do so; the pumps are now clean and are not coated with a gritty substance as formerly.

He says his experience with graphite shows that it will work in between the scale and the surface of the metal, causing the scale to loosen and fall off. He is unable, however, to explain the apparent dissolving action of the graphite on the surface of the old scale.

THE other day we started up one of our boilers after a thorough cleaning, and we were pleased to note that not a single cap leaked.

The reason is very simple. Each time after cleaning the boilers, the caps are well coated with the Dixon Graphite Pipe Joint Compound before they are put back and the next time they are taken off, they don't stick but leave a nice smooth seat. In this way, we never experience the least trouble in removing or replacing caps and a steam-tight joint is always assured.

DIXON'S graphite publications sent free upon request.

LUBRICATION VS. FRICTION

By L. H. SNYDER

In the old bicycle days, when the design was not perfected as it is today, we used to quickly feel it when the machine ran hard, perhaps not because of the reduction of speed, but more from the effect produced by getting the desired speed, and it was usually a case of taking the wheel apart, thoroughly cleaning and adjusting it with proper regard (seemingly) to lubrication. Now, with the motorcycle, the machine will get tired just the same as the bicycle, but we will not feel it, as the motor is an obedient servant and, unless grossly ill-treated, will continue to peg away until it falls down from sheer exhaustion. When the conditions get too bad, we notice it in several ways, particularly when proper attention is not given to lubrication and friction is collecting its commission.

The object of lubrication is to interpose between the moving parts a substance which will prevent the metal parts from coming into contact, and it must have a low resistance in itself (known as the co-efficient of friction). Water is taken as a standard and would be an ideal lubricant, as it is lowest in its internal friction, therefore the standard; but it has not sufficient body to prevent the parts from coming into contact, and does not preserve the parts against corrosion. Under the different classes of lubricants, we have liquid or fluid, semi-fluid and solid. When one speaks of a lubricant, they erroneously generally have in mind only oil of some kind or other.

Greases should be used wherever practical, as they have many advantages that oils do not possess, among which are: *First*—Grease is used only as needed and will stay in place. *Second*—One of its best features is the fact that when used upon the shaft, it forms a grease collar next and around the bearing, which prevents dirt and grit from working in. *Third*—Again, if there is an excess of friction, the grease will come to the rescue.

Under the class of solid lubricants, probably the best known and the most widely used is Ticonderoga flake graphite. The object of graphite (which is highly unctuous) is to get right at the real cause of friction by forming a thin, tough, veneer-like coating of marvelous smoothness over the minute irregularities existing on metal surfaces, and it has been proven by actual test that the co-efficient of friction is very much reduced when flake graphite is used with oil or grease in the right proportions; and even with ball bearings friction is perceptibly reduced and the bearings made to carry a heavier load.

Where splash lubrication is employed (for cylinder lubrication), a small quantity of finely pulverized flake graphite is put into the crank case in the proportion of a scant teaspoonful to a pint of oil, resulting in better compression, smoother running and bound pistons are a scarcity. Where splash lubrication is not employed, the spark plug may be removed and a small amount of flake graphite squirted into the cylinders through the spark plug aperture by means of an ordinary insect gun, which may be purchased at any drug store. The only care that has to be exercised is that too much graphite is not used.

In fact, wherever there is a mechanical movement of any kind and the parts are disconnected, it is a good practice to

thoroughly rub as much graphite as you possibly can into the metal surfaces. Some builders do not finish the parts as smooth as they used to, but thoroughly rub graphite into the metal surfaces before assembling.

Where grease is used, one should insist upon high grade flake graphite greases, as you get all the advantages of good grease lubrication with the added one, that of graphite lubrication.

The best manner to lubricate a chain is to take it off the sprocket, scrape off as much dirt as you can, and wash in kerosene. Make a mixture of tallow and flake graphite, heat and mix up thoroughly. This is the very best form of lubrication. Where a grease is used, it is only a temporary relief and in the end is worse than no lubrication at all, as the grease will hold the dirt and grit which otherwise would not be there. As it is not always practical to take off the chain, graphite may be dusted upon a cloth and rubbed over the chain, or some may be dusted on with an insect gun. There are upon the market specially prepared chain compounds which at first cost seem expensive, but in reality they are carefully compounded for the work required and are the cheapest in the end, and easily used. Regarding the above statements concerning graphite, only the finely pulverized flake graphite should be used.

"And what is so rare as a day in June?
Then, if ever, come perfect days;
Then Heaven tries earth if it be in tune,
And over it softly her warm ear lays;
Whether we look, or whether we listen,
We hear life murmur, or see it glisten;
Every clod feels a stir of might,
An instinct within it that reaches and towers,
And, groping blindly above it for light,
Climbs to a soul in grass and flowers;
The flush of life may well be seen
Thrilling back over hills and valleys;
The cowslip startles in meadows green,
The buttercup catches the sun in its chalice,
And there's never a leaf nor a blade too mean
To be some happy creature's palace;
The little bird sits at his door in the sun,
Atit like a blossom among the leaves,
And lets his illumined being o'errun
With the deluge of summer it receives;
His mate feels the eggs beneath her wings,
And the heart in her dumb breast flutters and sings;
He sings to the wide world and she to her nest—
In the nice ear of Nature which song is the best?"

—JAMES RUSSELL LOWELL.

A ST. PETERSBURG dispatch informs us that a Russian millionaire named Petroff, feeling his end approach, withdrew his entire wealth from the bank, burned it all, summoned his relatives to his bedside, showed them the ashes and congratulated them upon their escape from the evil of wealth; telling them that money was the source of all sin.

It may be the relatives made the old sinner eat the ashes. What they said would probably have burned the wires.

THE SPIRIT OF THE WEST

Here is how Dixon products are handled in the West. Western dealers are alive to the possibilities of advertising, and no doubt, reap the benefits to be derived from this modern selling force.

The accompanying advertisement is clipped from the *Los Angeles Times*. From its appearance we judge that the Western Rubber and Supply Company not only know how, but also *what* to advertise. The amount of space originally occupied by this advertisement is a good indication of the generally strong belief in publicity held throughout the West.

AUTO LUBRICANTS

Joseph Dixon Crucible Company

GRAPHITE AND GRAPHITE GREASES

Highest price lubricant made, but nevertheless is most economical, beside saving vastly more wear. Full stock on hand.

Everything for Garage or Car

Western Rubber & Supply Co.

1011-1015 So. Olive St. Los Angeles, Cal.

THE TIDES

There is no little fascination about the tides to the layman. They appear to come and go from and to nowhere. We all know how water will seek a perfect level and therefore it seems strange that it "bunches itself up" in certain places at certain times. *The Marine Review* sometime ago had quite an article on the subject of the tides. We believe our readers may find some interest in the various portions of the article which we quote:

"Twice every day we have the tides, twelve hours apart, nearly, and the flow and ebb are merely examples of the attraction of the gravitation which is exercised on all bodies, whether liquid or solid. The tides may be compared to a great wave, which, raised by the moon's attraction, follows her in her course round the earth. The sun also aids in this effect, but as the moon is so much nearer the earth her influence is far greater. The tides are highest at the equator and lowest at the poles, because the tropics are more exposed to the lunar attraction.

"The height to which the tide rises at any given point is determined largely by the configuration of the land.

"Thus on the Caribbean shore of Panama, the rise is only about a foot; at Boston, eight to ten feet, and in the Bay of Fundy, at its head, they rise to thirty-six and fifty feet.

"The theory of the tides are very simple to understand. This theory presupposes that the ocean covers the whole earth

with a uniform depth of water, so that the wave raised vertically below the moon by the moon's attraction, could follow her in her course around the earth undisturbed.

"Unfortunately the tides do not follow these simple laws, but, notwithstanding, they are governed and controlled in a large measure by them.

"Tides occur later each day because, while the earth is making a rotation, the moon is advancing in the same direction in her orbit; hence, the earth has to make a little more than a complete rotation to present the same point of its surface directly to the moon."

READY MIXED PAINT

The present change to paint, ready mixed and entirely prepared for use, is in conformity with the general advancement of the day. It is not revolutionary or extraordinary, it is simply a step in natural evolution or progression. So says the *Practical Decorator* and adds that the mixing of the paste paint by means of a stick into a condition for use has been superceded by the use of mechanism specially designed. The use of ready mixed paint is a gain to the painter and a convenience and economy.

In mixing up a paste paint or a paint pigment in dry form, it is not always possible to incorporate the necessary amount of oil. Oil is really the life of a paint. It is due mainly to the oil that the paint acquires its preservative virtue and it may be stated as a fact that the more oil (consistent with the retention of the proper working qualities) and the better the oil, the better the paint.

The present method of the preparation of good ready mixed paint necessitates the incorporation of a much larger percentage of oil. Therefore, the paint that is properly and thoroughly stirred by perfected machinery must be considered better paint. The *Practical Decorator* also adds that it is absolutely necessary for good results that the surface to be painted should be put in good condition. It is just as great a folly to expect durability from a bad priming coat as permanency from a building that has a poor, uncertain or bad foundation.

Whenever it is found necessary to thin a ready mixed paint, oil or turpentine may be used, but everyone using such thinners should assure themselves that the oil or turpentine is perfectly pure and of the best quality.

A MASTER mechanic, whose name we are not at liberty to use, on one of the large railroads, advises us of the excellent results he has had with the Dixon Flake Graphite on ball bearings of center plates, side bearings under cars, turn tables, jacks, etc.

A SOCIETY woman wrote to an army officer at Fort Sam Houston:

"Mrs. Smythe requests the pleasure of Captain Bunker's company at a reception, July sixteenth."

Next day she received this note of acceptance:

"With the exception of three men who have the measles and one who is in the guardhouse, Captain Bunker's company accepts Mrs. Smythe's kind invitation for the sixteenth."

—Everybody's.

GRAPHITE

VOL. XIII.

JULY, 1911.

No. 7.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

WHY OUR MERCHANTS FAIL IN SOUTH AMERICAN TRADE

Much has been said on this subject and apparently there remains much more to be said before the merchants and manufacturers of the United States are made to fully comprehend the seriousness of the subject.

The editor of *Leslie's Weekly* tells us that the merchants of Germany, France and England are reaping the large reward of business success in South America. American manufacturers have deliberately shut their eyes to the tremendous opportunities to the south of us; and then follows with an article written by a purser on southbound steamers, who has had an excellent opportunity to study conditions, and who has met some of the

leading American manufacturers and innumerable representatives and traveling salesmen on their way to Cuba, Mexico and South America.

He tells us that some of the leading American houses are not as yet well trained in the export trade. Before the goods are shipped South the trouble begins. In many instances the invoices are not properly made out and the bills of lading are sometimes illegible. The marks, numbers and weights on packages differ from those appearing on bills of lading, and the contents are in many instances declared on bills of lading "dry goods" for drugs, "hardware" for machinery, "liquors" for provisions, etc., etc.

Lewis Nixon, who went to Buenos Aires as a delegate to the Pan-American Congress, in his article in the *New York World*, says, "We have hung to the skirts of England long enough in weights and measures. Realizing the blessing of decimal currency, we should adopt the metric system without further delay." It is of the greatest importance for American manufacturers to adopt the metric system, which all Latin-American countries are using. Now there is constant confusion between kilograms and pounds.

American goods, also, are not properly packed. Machinery weighing over a ton has been seen cased in half-inch boards. Shoes boxed in fragile cases which have been used over and over again. Dry goods in second-hand cases patched all around. Cases of hardware and electrical appliances weighing over three hundred pounds packed in quarter-inch boards,

and, of course, after being handled a couple of times the cases were broken and the goods scattered all over the ship's hold. It seems ridiculous, but is nevertheless a fact, that cases of macaroni packed in Italy, weighing about forty pounds, are better packed than some of the above mentioned goods.

England and Germany send representatives and traveling salesmen to South America who fluently speak the Spanish and Portuguese languages. American manufacturers send men who have not been well trained and who speak only the English language.

The argument made by some American manufacturers that they have all the business that they can attend to in the United States can be true only for a time, as all manufacturers must sooner or later look to trade in Cuba, South America and Mexico. Some two years ago an American automobile manufacturer, when asked why he did not look for business in South America, said that his firm had an order for seven thousand automobiles in the United States, and that they had no time to look into the foreign trade. Today this same firm is spending thousands of dollars for advertising purposes in Argentine and other South American countries.

VACATIONS

Business is a means, not an end, says *Northwest*; if a business man does not early cultivate a taste for the higher things in life he becomes so absorbed in the game of business that later on he cannot be happy without it. After he has a competence he continues in trade, like the squirrel going around the wheel, for lack of something better to do. He cannot enjoy leisure, though he has fairly earned it.

Vacations are the coupons on the bonds of industry that mature semi-annually. Cut these coupons regularly, so that they in their turn may be vitalized and earn interest.

If a man's idea of his indispensability is really well founded, his business organization is a failure.

A HYPNOTIZED LEAD PENCIL

In a very prominent and very sensational court case lately tried in Maine, a hypnotized lead pencil was one of the features. It has been remarked for many years that those who made use of Dixon's American Graphite Pencils, where much writing was to be done, were conscious of an absence of fatigue, and a clearness and serenity of mind not possible when using any other writing instrument.

We had always supposed it due to the smoothness and fine quality of the Dixon leads, but it may be that the Dixon pencils are really hypnotized.



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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POSTAGE ON FOREIGN MAIL

The United States Government again calls the attention of its merchants and others to carelessness in correspondence, which is often responsible for failure of American manufacturers and exporters to establish permanent and profitable relations with foreign commercial houses.

Nothing seems to annoy or anger our foreign friends more than to receive packages or catalogs or letters upon which the required postage has not been fully prepaid. Although it may appear a trivial matter, it nevertheless creates a prejudice against American dealers that is difficult to remove. It seems to carry the idea that American manufacturers are lacking in the knowledge of how to do export business.

Even the consular officers of the United States are frequent victims of such carelessness. Complaints of short postage continue in spite of repeated admonitions sent out by the government in its daily consular and trade reports and through the export publications of the country.

The Consul General of Buenos Aires states that business men who would not think of sending a letter from New York to Chicago with a one cent postage stamp, appear to have no compunction about sending letters, catalogs and mail matter of all kinds to Argentine with either no postage at all or deficient postage.

Similar statements come through the consuls at Jamaica, India, South Africa, South America and various parts of Europe. The primary cause seems to be carelessness, while ignorance of postal rates make plain some of the delinquencies.

Such mistakes and such carelessness are construed as loose business methods, and as we have already said, cause prejudice against American manufacturers and business men.

One suggestion is made by the Vice Consul of Amsterdam, who suggests that the use of two boxes for outgoing mails, one foreign, the other domestic, would go far toward remedying this apparent neglect on the part of either the clerks or the mail boy.

Another method is to have the stenographers or writers attach a little slip reading "Foreign mail" to each letter or package, so that the mail boy may have something to remind him to put on the correct postage.

WANTS A SCHOOL

(The following is a verbatim application for a position in a high school in an eastern city.)

"Begging your pardon for the procrastination of this letter, allow me to express my fervent willingness to secure, if possible, the situation as a teacher in your school.

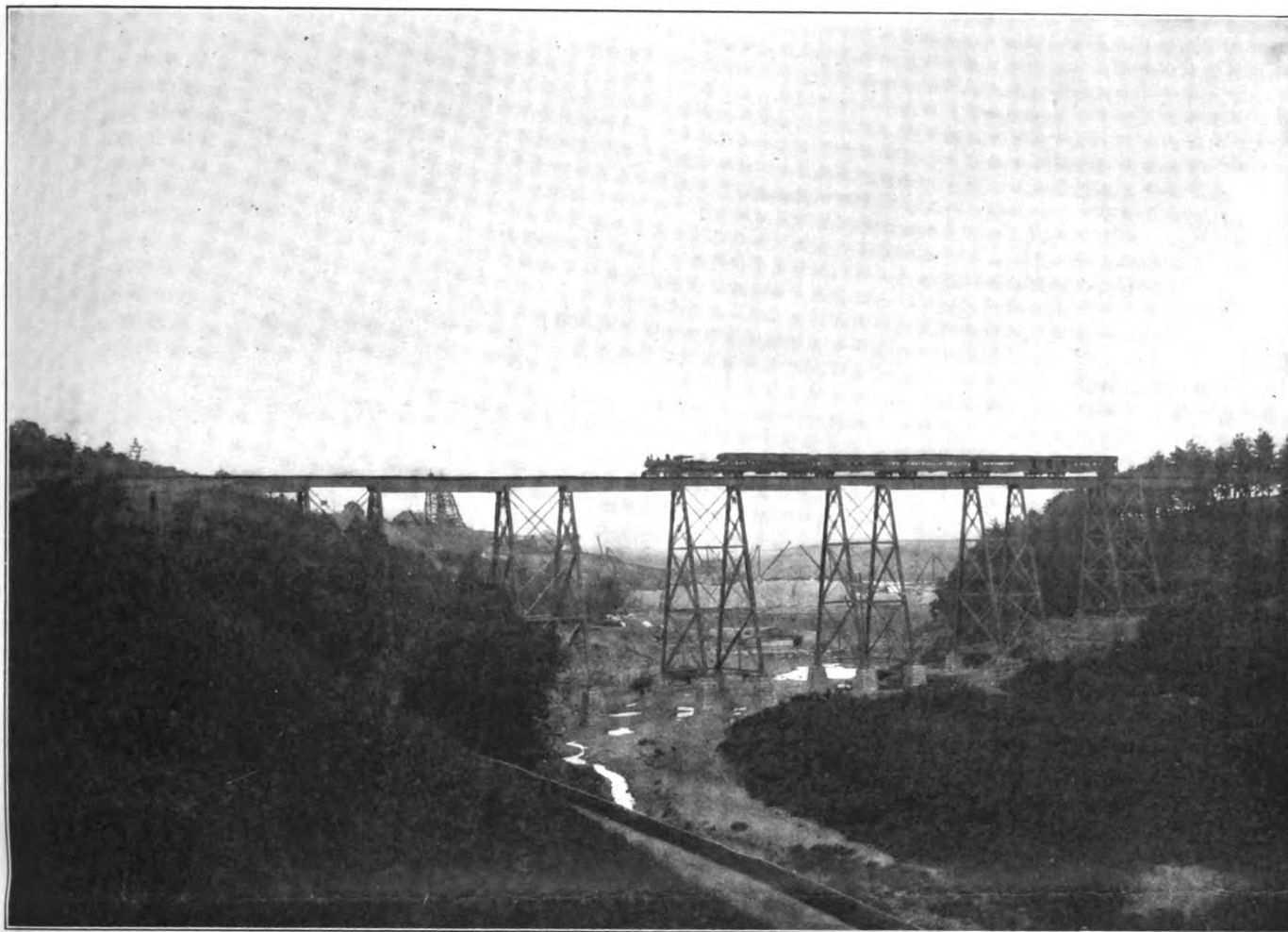
"My preliminary culture has been nurtured and supplemented by assiduous efforts on my part to become an adept in those branches which my inherent propensity behooves me to teach.

"I taught miscellaneous subjects, science, and linguistry, conjointly. The faculty were much pleased with my work, as I endeavored to do my best, integrity and sincerity being my weapons. Thereafter I taught sundry subjects. My experience, allow me to say, has been augmented by esoteric teaching which gave me splendid opportunity to temper my previous instruction. The subjects enumerated in the recommendation blank appealed to me from the standpoint of having taught them before, and I earnestly hope to receive word of your approbation."—*Journal of Education*.

DIXON'S AIR BRAKE GRAPHITE AND DIXON'S ENGINE FRONT FINISH FOR LOCOMOTIVES

It looks now as though practically every railroad in the United States will make use of Dixon's Air Brake Graphite on the air brake systems, and Dixon's Engine Front Finish for the fronts of the engines.

Much time and attention has been given the matter by experts and authorities with the result that everything now points to the use of the Dixon products.



CLINTON VIADUCT, BOSTON & MAINE R. R.

The accompanying illustration gives an interesting view of the Clinton Viaduct, Boston & Maine R. R., situated in a picturesque section near Clinton, Mass.

The illustration gives a good idea of the height of the structure, and it is easily appreciated that for such work it is specially desirable to have a paint that will wear the longest to avoid the expense of frequent repainting.

Dixon's Silica-Graphite Paint was applied to the Clinton Viaduct two years ago, and a recent inspection showed it to be in first-class condition.

ONE POINT OF VIEW ON TRUSTS

Quoting from the *New York Times*, it is one of the anomalies of legislation under a popular government that the people have immensely benefited by the operation of these gigantic combinations in restraint of trade which they have now struck down by their laws. It would have been impossible for a hundred or two hundred comparatively small competing corporations to produce and supply for consumption refined petroleum at the price paid for it by the householders of the United States during the last thirty years. By reason of the vast power acquired through practices now declared unlawful, by the business and industrial genius of its chief men and its subordinate managers, by the application of time and money saving methods carefully planned and continually improved, by the economies made possible through large-scale production and distribution, by the profitable use of every by-product

and by the application of its own methods to the minor industries tributary to its business, and by the command of enormous capital which alone made possible the highest beneficial use of all these methods which have long been considered the country's most brilliant example of efficiency in business, the Standard Oil Company, this great monopoly, has been able to produce and sell illuminating oil and other products of petroleum at a price of which the consumer could not reasonably complain.

We do not know that it can truthfully be said of the American Tobacco Company that it has materially lowered the price or improved the quality of cigars, cigarettes, chewing tobacco, snuff and other manufactures of the tobacco plant. But at least, extortion is not the offense of which that concern has now been adjudged guilty, and it is not dissolved because of attempts to maintain high prices. In the opinion of the court nothing is said about unreasonable prices. So the sugar trust, which is very much disliked in this country, has never robbed the consumer. The annual household outlay for sweetening has, no doubt been less than it would have been had the product been supplied by a large number of competing refineries. But the American people have declared that the oil company and the tobacco company must go out of existence.

"THINK, my hearers," said he, "of a poor neglected wife, all alone in the great dreary house, rocking the cradle of her sleeping babe with one foot and wiping away her tears with the other."



**THE NEW MUNICIPAL BUILDING AT
TRENTON, N. J.**

The above reproduction is of the new Municipal Building at Trenton, N. J., designed by Mr. Spencer Roberts, architect, and erected by N. A. K. Bugbee & Company of Trenton, at the cost of about \$450,000.

In general plan the Municipal Building is a long rectangle with a grand central main hall with entrances from the north and south and with a longitudinal corridor having entrances at both ends on the east and west. The main entrance is through a portico with three arches, over the middle one of which appears the seal of the city of Trenton.

The style of architecture may be described as the Roman Doric, largely modified in many details by the French renaissance. The entire exterior of the building, with the exception of the rear facade, is faced with Vermont marble.

Two hundred gallons of Dixon's Silica-Graphite Paint, Black, were used on the structural steel. T. G. Doak & Company of Philadelphia were the general contractors, and the Belmont Iron Works, iron contractors.

JUST because the tortoise beat the hare, don't settle down to be a tortoise. Be a hare, but not that kind of a hare.

—*Economic Advertising.*

ATMOSPHERE AND FRICTION

We are told by the experts that we need not hope much from the increased size of telescopes so far as our further knowledge of the planets or the stars is concerned.

Against the probability of much further progress in that direction, is the stubborn fact that we are living at the bottom of an ocean of air. We have the air to deal with in astronomical observation, and we cannot put it out of the way for our convenience. It is a question of atmosphere rather than the size or power of the instrument.

In the same way in the mechanical world, we have the stubborn fact of friction that we must always deal with and in spite of improvements in anti-friction bearings, we must continue to reckon with friction and to rely upon lubricants.

An expert mechanical engineer once said that the more solid the lubricant the better the result, and of all solid lubricants known to theory or practice, there is none the equal of pure flake graphite.

The Ticonderoga flake graphite has one advantage not possessed by any other flake graphite, that of thinness of flake which enables the microscopical irregularities of the bearing surfaces to be built up slowly and evenly until there is a graphite-to-graphite contact of marvelous smoothness and endurance.

THE MAN FROM THE WEST

While the man from the West was sounding the depths of a deep sea armchair at the hotel, he volunteered to part with some loose observations he had accumulated since his arrival here a few days ago. He was extracting the smoke from one of those gayly caparisoned cigars and was giving a splendid imitation of a smouldering fire in a grain elevator when the reporter found him.

"Pretty speedy town, eh?" he was asked.

"Well, that all depends," drawled the gentleman from the West, giving the first intimation that he was not going to be bound by the caucus rule. "If you refer to the vehicles, yes; to business, no."

"Then you think we of New York are slow?"

DON'T DARE BE SLOW

"Not in the speed sense. You don't dare to be. But they are no faster than other folks, in a business sense. You have acquired the reputation of always being in a hurry. I have been reading all my later life about the constant rush in this city, but I wasn't here twenty-four hours before I realized the reason for that hurry—and I am certain that business has nothing to do with it."

"Let us know the worst at once. Don't delay the agony."

"Get this, then. Folks in New York hurry every minute of the day because if they do not they will get run over. There's the explanation. You've got to hurry in this town if you want to keep out of the hospital or the morgue. You've got so used to dodging street cars, automobiles, trucks, fire engines, ambulances, bicycles and heaven knows how many other kinds of vehicles, that it has become second nature to walk as if you were running. Of course there is more business here than in any other place on earth, but your business would not make it necessary for every man, woman and child to act as if the devil were after them."

"How did you reach this conclusion?"

HERALD SQUARE BUSIEST

"The greater part of it was formed in Herald Square. Such a rushing, racing, breathless bunch of human beings I never saw in my life before. I started to cross the street, and if it had not been for one of your policemen they would be trying to identify my mangled body now. On the level, I think everything from a wheelbarrow to an aeroplane whizzed by me on that journey. When I reached the middle of the roadway it looked to be a mile and a half to the other side. Everybody was dodging this way and that, and when the 'cop' landed me in safety I wanted to kiss him. I stood there counting my legs for fifteen minutes to make sure they were still with me."

"Well, you struck the busiest spot in America."

"I expected it would be pretty busy in the roadway, but the sidewalk is almost as bad. Sandwich men, carriage starters, delivery carts and boys and girls on roller skates come rushing at you from every direction. I stopped to light a cigar, and I was knocked seven or eight feet. You run to get a street car, you run after you get on it and you run when you get off. They never stop. Even women we defer to on account of their age get on and off them like birds."

LOOSENING TIGHT BOLTS

All engineers, machinists and others who have anything to do with bolts and nuts, if in any way experienced make use of a little graphite and oil or of graphite and grease when putting nuts and bolts together. The use of graphite, even dry graphite, on the thread of bolts, will positively prevent the nuts from becoming rusted on the bolts.

When graphite is not used and it is necessary to loosen rusted nuts, it is good practice to treat the parts liberally with kerosene and wait fifteen or twenty minutes for the oil to find its way around the threads.

If after this treatment the wrench fails to start the nut, try the effects of heat. This may be done by means of a blow



torch which will cause the metal to expand and break the rust which holds the threaded member in place.

The flame of the torch should be applied directly to the nut so that it may expand more than the bolt, thereby permitting it to be removed without danger.

The nut may be still more expanded while it is warm by holding a hammer or other weighty object against one face and tapping the opposite side with another and lighter hammer.

If it is found impossible to loosen the nut after this treatment, it must be cut away with a cold chisel.

A BRASS CASTER'S SUGGESTIONS

We are indebted to an experienced brass caster for the following suggestions which are well worth trying:

To keep brass and white metal patterns clean, melt five ounces of bayberry wax (or bayberry tallow, which is one and the same) and pour into one gallon benzine while wax is hot. Use this with a brush on your metal patterns. The benzine brightens up and cleans the patterns and on evaporating leaves a thin coating of the bayberry wax on the pattern, which will prevent tarnishing for a long time.

To make a plaster of Paris match without oil use two pounds of dextrin and ten quarts of boiling water. Stir till dissolved, then use this one half and one half with water and mix with plaster of Paris. Pour over night, though a couple of days drying will be better. A harder and more durable match will result than in using expensive linseed oil.

INTERESTED IN CRUCIBLE RUNS?

A No. 275 Dixon Graphite Crucible ran thirty heats in a Steele-Harvey Oil Furnace, during which time 9,075 pounds of brass were melted. After the thirtieth heat it was considered best not to again run the crucible, although its appearance was fairly good.

UNSIMPLIFIED ENGLISH

These samples of homophony show our language as it may be and often is writ. At home our funny spelling is as odd as abroad.

A rite suite little buoy, the sun of a grate kernel, with a rough about his neck, flue up the rode swift as eh dear. After a thyme he stopped at a gnu house and wrung the belle. His tow hurt hymn and he kneaded wrest.

He was two tired to raze his fare, pail face. A feint mown of pane rows from his lips. The made who herd the belle was about to pair a pare; but she through it aside and ran with awl her mite for fear her guessed would knot weight. But wen she saw the little won, tiers stood in her blew eyes at the site.

"Ewe poor deer! Why due yew lye hear? Ewer dyeing, aye fear."

"Know," he said. "Isle soon bee awl rite; butt now I'm feint to the corps. Eye aught too bee shone a quite plays."

"Aisle dew my best four you; neigh moor!" she cried, fore her hart was full of whoa.

Sew she boar hymn two a rheum wear he mite be a-loan, gave him bred and mete, held cent under his knows, tide his choler and beau, rapped him warmly, gave him sum suite drachm from a viol, till at last he went fourth hail and well as a young hoarse. His eyes shown, his cheeks were read as a flour, and he gambled a hole our. Hens thee end of hour tail.—*Tit-Bits*.

DIXON'S SILICA-GRAPHITE PAINT IS BEST PROTECTION FOR ALL

Iron vessels cross the ocean,
Iron engines give them motion,
Iron needles northward veering,
Iron tillers vessels steering;
Iron pipes our gas delivers;
Iron bridges span our rivers;
Iron horses draw our loads,
Iron rails compose our roads.
Iron anchors hold in sands;
Iron bolts, and rods and bands.
Iron houses, iron walls,
Iron for your stable stalls;
Iron doors and iron chains,
Iron roofs that keep out rains;
Iron trucks beneath street cars,
Iron coal cars and brake-bars;
Iron tanks and iron bins,
Iron boiler fronts and pins,
Iron signal pipes; grain elevators;
Iron gas holders and sheds for aviators;
Iron observatories on craters;
Iron rolls for escalators;
Iron halls for Alma Maters!
Iron smoke-stacks, fences, screws,—
Iron everything we use.

(Adapted by L. M. S.)

THE unlucky man is the one who puts on a chest protector and then gets hit in the back.—*Economic Advertising*.

ADVERTISIS, OR THE RAVINGS OF A STRAP HANGER

Lemon's Talcum Toilem Powder
Makes light bread, but not clam chowder.
Uwant biscuits keep off rabies.
The Inchmere Flats do same to babies.
Try our coat-cut pants and vests,
Brown's moving vans remove all pests.
Sprigley's well meant Onion gum
Makes blind men see and deaf ones dumb.
You cannot chew the label off
And Hideseek's Plug will stop that cough.
Scott's Emotion's just as good
To take out spots or use as food.
The Taxicab kills one each minute,
You see it's safer to be in it.
Camel soup for face or hand,
Do try this on your "baby grand."
Near-soap's best—'tis plainly seen
It gets you nearly almost clean.
If it isn't an Eastman, it's maybe a trunk.
If it isn't meant for your family it can't be too punk.
Underwear of shredded wheat
Means comfort for the tired feet.
Osmellee is the best of seasons,
There are fifty-seven reasons.
Leave off breathing for ten days,
Barren Island dyeing pays.
O'Halley's new live rubber eels
Make walking easy after meals.
Red Ravenette looks just like silk
When dipped in Morlick's Halted Milk.
Why get your clothes at Podgers Reet,
When Liquid New Skin looks so sweet?
Lyer's make are gloves that fit
And like old friends they sometimes split
Gullet's Safety Carpet Sweeper
Improves the voice and makes it deeper.
For Breakfast, Flakes of Ostermoor
Will cure the spine of curvature.
Your home's in Brooklyn—like to move it?
Use Dynamite—and we can prove it.
Have you read the "Call of the Gutter"
The same one wrote, "O yes, they cut her!"
You say you're dying? Very well,
Book your seat for "Seeing Hell!"—*Life*.

TIN ROOFS

Mr. Henry Weiler, Sr., of 636 Washington Avenue, Dunkirk, N. Y., in favoring us with his usual order for Dixon's Silica-Graphite Paint, writes us as follows:

"I have used Dixon's Silica-Graphite Paint (Dark Red) on the tin roof of my residence for many years with excellent results, giving one coat every three years."

This is a good example to follow.

YOU cannot measure the value of a man's work by the number of hours he sits at his desk.—*Economic Advertising*.

GRAPHITE AND SOME OF ITS USES

By L. H. SNYDER

(From "*Loco*," May, 1911)

Graphite, a mineral, is one of the natural forms of carbon, belonging to the same family as the diamond; the diamond being the hardest form of carbon and graphite the softest.

There are many conditions which determine the commercial value of graphite, such as its physical formation, its unctuousness or lubricating quality and the use to which it is put. Graphite enters into practically every known manufactured product, either directly or indirectly. Its largest fields are for lubrication, manufacture of graphite crucibles, electrical apparatus, manufacture of paint, pencils, gun powder, etc., and for each particular purpose its physical formation largely determines its value. For instance, graphite for manufacturing crucibles must be of a quality the flakes of which are heavy, tough, and with surfaces more or less irregular to enable them to stick to the binder used.

Graphite is found in practically every country and appears most frequently of a low grade, amorphous variety, the refining of which would be an expensive operation and the product of such a low grade that it would not pay to work the prospect. In this connection it is probably safe to say that relatively there has been more money lost in graphite ventures and developments than in any other mining speculation.

In this paper we are most interested in the application of graphite as a lubricant. The company with which the writer is associated has carefully studied graphite in its different phases and formations since its earliest conception as a commercial factor. Many years ago it was proven conclusively that graphite of the flake formation, such as comes from the mine at Ticonderoga, N. Y., is far superior to any other grade for lubricating purposes. This conclusion was arrived at after carefully conducted tests by eminent authorities, and careful observance of the performance of graphite in practical operation. Notwithstanding that it costs much more to refine this particular product, this company has always refused to shoulder any responsibility when other grades of graphite were used and advocated graphite as a lubricant in this one form only.

Before proceeding further, it might be well to go back to the earliest uses of graphite. One of the first peculiarities noted was its marking ability. Our first pencils consisted of the rough, unfinished ore. Because of this property of marking it was believed to be a form of lead and hence the names "black lead" and "lead pencil." Black lead is now the trade name of the cheaper forms or inferior grades of graphite, plumbago of the Ceylon product, and graphite of the American variety. Records show that the first graphite imported into this country was by Joseph Dixon about one hundred years ago, and used for making graphite crucibles. From this small beginning there has grown a large variety of graphite products and manufacturing processes in which graphite is used in some form or other.

GRAPHITE FOR LUBRICATION

If metal surfaces are examined under a microscope it will be noticed that all are more or less rough, having the appearance of hills and valleys. It is the rubbing of the high spots

that causes friction losses and wear. Flake graphite becomes attached or pinned to the high spots, building up over the whole metal surface a thin, tough, veneer-like coating of marvelous smoothness, making a graphite-to-graphite contact instead of a metal-to-metal contact. By its use hot boxes are cured, friction losses reduced, high efficiency obtained and better operation insured. Flake graphite is absolutely inert, is unchanged by acids or alkalies or any temperature encountered in the engineering profession, thus making its field practically unlimited.

Graphite is not a competing product with oils and greases, as will be pointed out later, but rather is a substance which stimulates their lubricating value and helps them to perform their arduous duties. The reason why graphite is not more generally used alone, that is without oils and greases, is because of its extreme lightness which prevents its being evenly distributed over the surfaces. Therefore it is ordinarily used to best advantage with oils and greases which serve as a carrier.

We have often wished, perhaps, that graphite would not settle in the lighter lubricating oils, as of course this would be at first glance an ideal condition. Much has been heard in regard to graphite oils, but after careful consideration of the first principle of graphite lubrication, it will readily be seen why this is impractical. As said before, the primary requisite of graphite as a lubricant is that it gets to the metal surfaces, or in other words, it is a surfacer and would be absolutely of no use if it were not for this property. A graphite which does not settle readily in oil will not become permanently attached to the metal surfaces, but will be floated away from them. This phenomenon is illustrated by simply noting the sharpening of a steel tool upon an oil stone. It is necessary to occasionally squirt oil upon the stone in order to float the microscopical particles of metal out of the pores so as to renew the cutting power of the stone, that the steel edge may come in contact with the stone. In a similar way, powdered graphite of extreme fineness is floated away from bearing surfaces and carried out of the journal box with the oil. Therefore a graphite which does not become firmly fastened upon the metal surfaces but is simply carried through the bearing with the oil, defeats its purpose, as comparatively little good can result from its use. On the other hand it is obvious that a thin, flake graphite which settles in the oil will reach the surfaces intended to be lubricated and will become pinned fast to the metal by the pressure of the bearings.

The claim is made that wherever there is mechanical movement, some form of graphite lubricant may be used to advantage. Today graphite is successfully lubricating machinery of the most ponderous and heavy parts down to the light, delicate mechanism of the air brake system on railroads. An especially interesting application of graphite as a lubricant is its use for lubricating air compressor cylinders. Many disastrous accidents have been traced to the volatilization of inferior grades of lubricating oil. The vapors going over into the air line or receiver tank form a powerful explosive mixture, which if ignited in any way, causes a most violent and destructive explosion. By the use of flake graphite the danger is eliminated, because the use of oil may be entirely done away with, or the amount used reduced to a minimum. Graphite may be introduced into the air intake by means of a special graphite lubricator or by mixing with soapsuds.

It is said that where graphite is used in the steam end of ammonia compressors that there is very little loss of condensed steam, which in itself is a considerable waste, and that better lubrication is secured.

Before leaving the general subject of graphite as a lubricant, attention should be called to one of the points brought out in this article, that there is as much difference in graphite as there is in the term "oil." One would not think of using crude oil or kerosene oil where a high grade lubricating oil for special purposes is demanded. The same discrimination should be used in selecting lubricating graphite. The physical formations of graphite are the flake or foliated, and the amorphous or powdered. The reason why amorphous graphite is not suitable for lubricating purposes is because there is always a tendency for it to pack and form into pasty balls. It does not attach itself readily to metal surfaces because it will not settle readily in oil. It is frail and its lubricating properties are not available.

To define the word "unctuousness" it may be explained that it is not a peculiarity of any ONE graphite but that all graphite is more or less unctuous. This quality is one of the characteristics distinguishing graphite from carbon, and the term unctuous must therefore be associated with any kind of graphite. Some graphites, of course, are more unctuous than others. We also must not be confused with the term "purity." While this sounds very nice and much may be made of it, an alloy oftentimes is much more valuable than the pure article for long wear and practical purposes. What we are most concerned with is what the material will do under actual performances. All records established the fact that for durability and lubricating value flake graphite is unequalled.

It would be out of place for me to tell engineers how to use graphite in an engine room, as this is one of the first things learned by the beginner. However, it is well to sound one word of caution and that is, do not ever go on the theory that if a little graphite is good, a whole lot more is better. An excess quantity makes the lubricant too viscous, thereby greatly increasing the friction of the lubricant itself, and is also likely to clog up the small oil ways and prevent the parts from getting oil.

(To be continued.)

LETTER WRITING

Letter writing doesn't seem to be an entirely lost art. The modern circular letter is certainly a work of art, if in no other way in the manner of its get-up, as it is frequently an even bet whether it is a personal letter or a circular letter. The cleverness put in some of these letters is frequently sufficient to cause the letter to be taken as "gospel truth."

The Philadelphia branch of the Dixon Company are past masters in the art of letter writing. "Billy" Coane, the genial manager of that office, is a past master in the art of salesmanship, and knows how to put the suavity and the forceful argument of the salesman into his circular letters and they may safely be taken as "gospel truth."

One of the parties who received one of Mr. Coane's circular letters was good enough to send it to us with the suggestion that we put a feather in Mr. Coane's cap as a letter writer. He says:

"This is a good letter and will command the attention of a fair percentage of those who receive it.

"For ourselves, we are but occasional buyers of products similar to those you manufacture, and when in need always send you our orders without competitive prices being checked against you, for the reason that it doesn't seem to us that a concern that is so faithfully at work all the time to produce the maximum in goods and service should be required to meet prices made for goods quite out of their class."

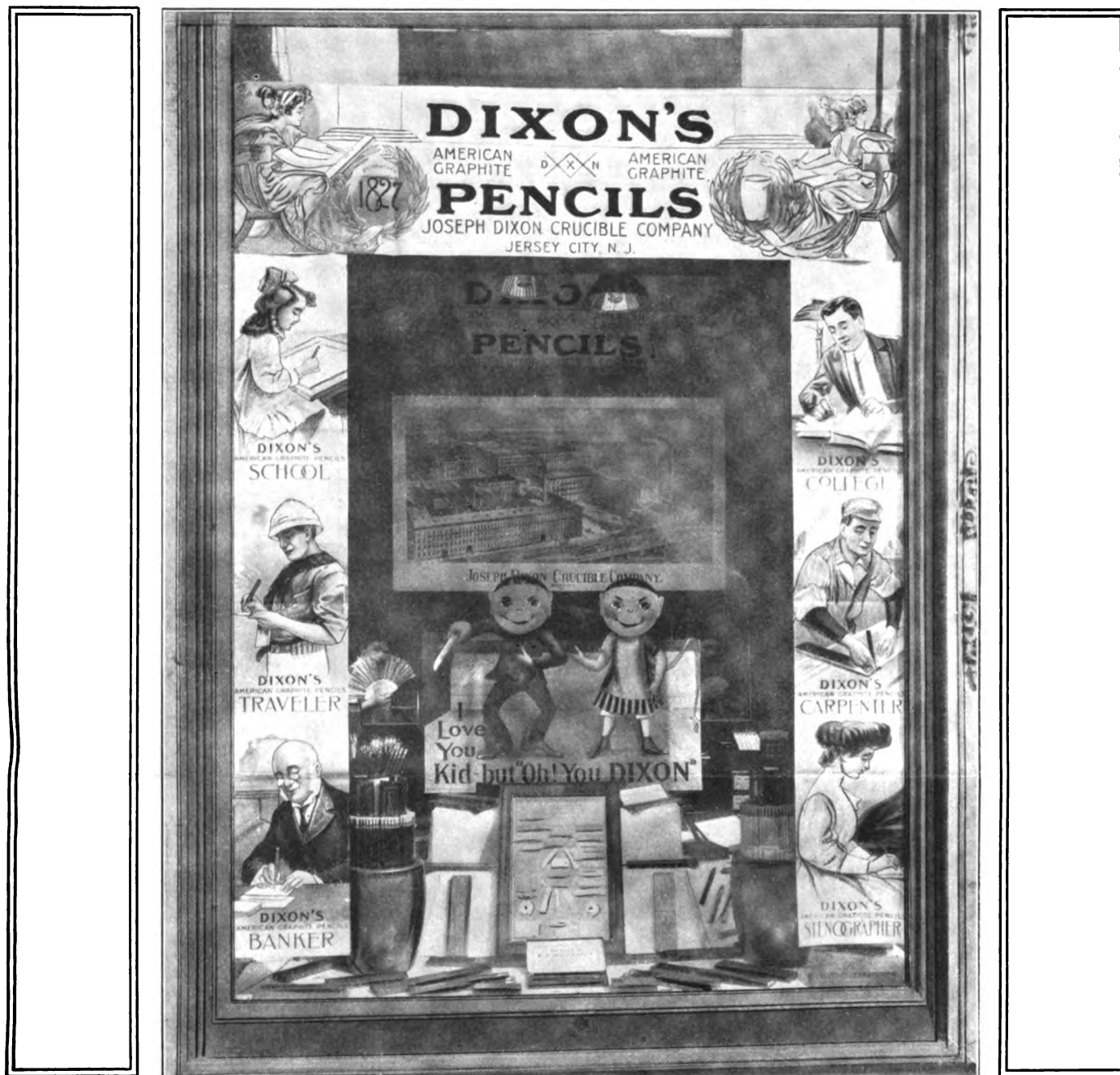
We greatly appreciate such replies and endeavor to be worthy of all the nice things said of our products and methods.



In the above reproduction of a recent blotter by the Dixon Company the well-known features of "The Empire Builder" are easily recognized. We will be glad to mail any reader of GRAPHITE a few of these blotters on request.

THE manufacturer who decides that he will put out honest, reliable goods and then trust to the system of being "advertised by his loving friends," will undoubtedly in time acquire a delightful little circle of "loving friends," but he will never live to see his trade-mark rated at a million dollars.

—Economic Advertising.



ADAMS & WHITE WINDOW DISPLAY

The illustration is of a recent window display of Dixon's pencils made by the Adams & White Company of Buffalo, N. Y.

The display is, perhaps, chiefly remarkable in that so good an effect was obtained with so small a window. The Dixon posters, graphically indicative of the wide use of Dixon's pencils, are arranged so as to serve as an attractive border. The interest created by the posters tends to carry the eye to the interior decoration where the Dixon Brownies are holding forth with their usual broad grins, often reflected in the faces of the window spectators.

The advertising value of such displays are worth not only the mere amount of time and care spent upon them, but bring to the retail stationer bigger and better business.

DIXON'S graphite publications sent free upon request.

DIXON DAFFYDILS

"D'ye know about the big fight?"

"What big fight?"

"Graphite!"

"Officer!"

"Hear about the great fight?"

"Naw, what fight?"

"Dixon's."

"We love each flake of his formation!"

"I say he can't do it!"

"Who can't?"

"Lubricant!"

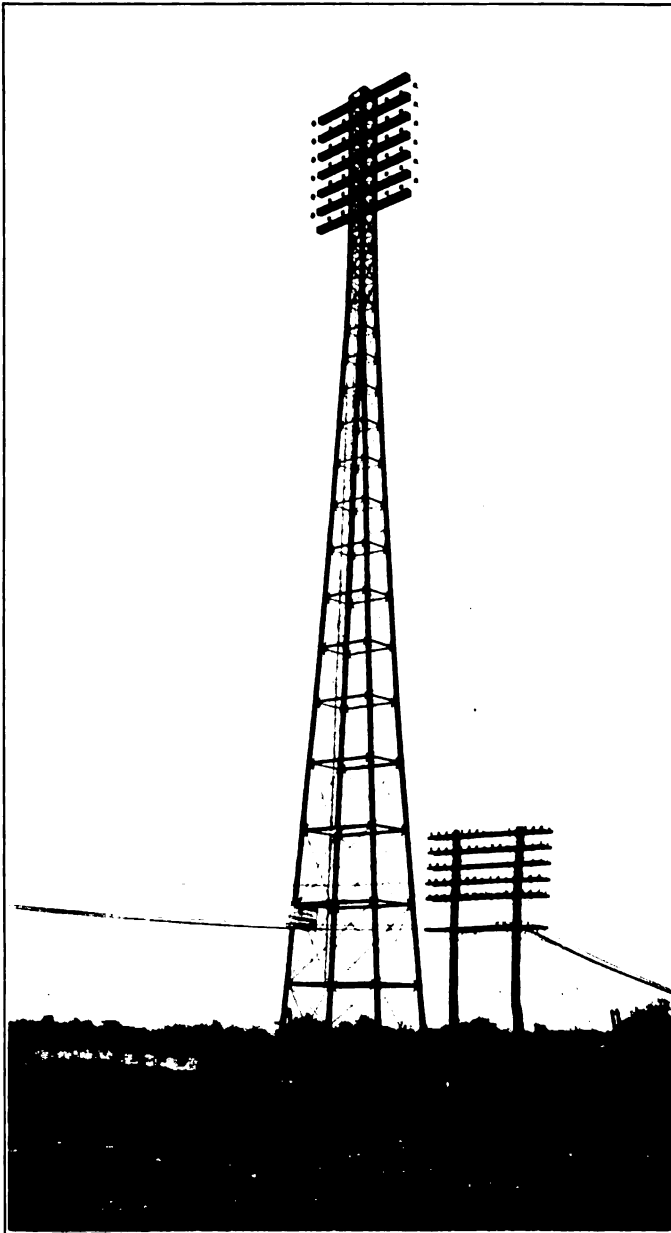
"Oui, Oui, Monsieur!"

"They say he can't do it."

"Well, who can't?"

"Graphitoleo!"

"I love every microscopic irregularity in his metal surface."



COOPERS CREEK TRANSMISSION TOWERS

On this page is a photographic reproduction of one of the Coopers Creek Transmission Towers of the Public Service Corporation at Camden, N. J.

The transmission towers are the second highest in the world and were designed by Mr. R. D. Coombs, consulting engineer and erected by the well known firm of Fitzpatrick & Coombs, Inc., of New York City. The Belmont Iron Works of Philadelphia were the fabricators.

A shop coat of Dixon's Silica-Graphite Paint, Dark Red, was applied by the fabricators and Dixon's Olive Green was used by the erectors.

The following data may be of interest to some of our readers:

Height . . .	156 feet	Rise of Wires .	99 feet
Span . . .	270 feet	Voltage . . .	31,000
Normal Sag .	4.5 feet	Number of Wires .	36

Gage and material, 250,000 C. M. hard drawn stranded copper.

DIXON's graphite publications sent free upon request.

IMPRESSIONS OF FOUNDRYMEN'S CONVENTION

Mr. J. A. Condit, manager of our Buffalo office, attended the recent Pittsburg Foundrymen's Convention at the Dixon booth and writes the following interesting letter concerning his impressions of the event:

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—The writer attended this convention, leaving Buffalo on May 21st and returning to the Buffalo office on May 27th.

The attendance at this convention was reported to be six thousand, and it is growing in importance each year.

The exhibit of the supply men was the finest that we had seen at any of the previous conventions. The Dixon booth was very favorably situated, so that all who entered the convention hall would strike us first.

Our little souvenir seemed to be appreciated. The souvenirs were not as much in evidence as at former conventions. One manufacturer gave out a very handsome leather clock. The scheme of distribution was to send, previous to the convention, a letter to the foremen with whom the firm was doing business, and in order to secure the clocks the foremen had to present these letters at the convention.

The writer heard that a great many of the foremen of the foundries who saw others getting this clock and were refused because they did not have a letter, were very much disappointed and remarked that they would never buy anything from this firm.

It seems to the writer it is a mistake to give out so expensive a souvenir as this, for a firm makes more enemies than friends. The only souvenir to give is something you are at liberty to give every person, as we have to realize every exhibitor is also a customer of the Dixon Company for some product.

The Dixon booth had many visitors most of the time. We had a great many of the customers from New York State and Canada, but there were a great many that were not present that we would have liked to have seen.

The writer was also much pleased to see quite a number of his old friends, whom he formerly called on in Ohio, who had not forgotten the writer and are still using the Dixon products.

It was voted at this convention to have the one for 1912 in Buffalo, and we expect there will be an attendance between eight and nine thousand at this convention next year.

Very truly yours,

J. A. CONDIT,

Manager Buffalo Office.

WHAT HAPPENS TO DEACONS

Monday, 10 A. M. Deacon Norris quite sick.

Monday, 1 P. M. Deacon Norris slightly worse.

Monday, 5 P. M. Deacon Norris worse.

Tuesday, 9 A. M. Deacon Norris very much worse—family has been summoned.

Tuesday, 11 A. M. Deacon Norris has died and gone to Heaven. Funeral at three on Thursday.

Saturday, 10 A. M., by wireless. Great excitement in Heaven; Deacon Norris not yet arrived.

DIXON's graphite publications sent free upon request.



CROISIC REALTY BUILDING

At the corner of Madison Avenue and 26th Street, overlooking Madison Square Park, stands the recently completed Croisic Realty Building, designed by Brown & Almirotty, architects.

This handsome structure is twenty stories high and cost seven hundred thousand dollars.

Throughout the entire building construction only the best materials were used, the Hay Foundry and Iron Works applying both the shop coat of Dixon's Dark Red and the field coat of Dixon's Olive Green to the eighteen hundred tons of steel.

S. O. Miller was the consulting engineer.

A CRITIC is a fellow who can tell better how a thing ought to be done than he can do it himself.—*Economic Advertising*.

DIXON'S graphite publications sent free upon request.

LUBRICATING LOCOMOTIVE VALVES AND CYLINDERS WITH GRAPHITE

"The Long Island has for some time been operating an eight-wheel passenger locomotive equipped with a device for lubricating the valves and cylinders with a mixture of extra fine crystalline graphite and oil. As a result the surfaces soon became coated with a thin film of graphite, reducing the friction between the parts, as compared with the use of oil, and also considerably increasing the number of miles run per pint of lubricant. While no fuel tests have been made, those in charge of the locomotive believe that less coal is required per unit of output. Tests of European locomotives equipped with the same device are said to show a fuel saving of five per cent and upward."—*Railway Age Gazette*.

"A GOOD RECORD"

In regard to the samples of brushes which you sent us for trial would state that I had the same placed in a motor and the result watched closely.

The motor on which the brushes were used was overloaded and the commutator in bad shape. Brush renewals had been frequent, as the motor was in constant use and repairs were impossible.

Your brushes were adjusted after merely cleaning the commutator and the effect was almost immediate. The sparking almost ceased and the commutator did not become blackened again. Later the commutator took on a good finish and that motor has given us no further trouble, whereas before it required constant attention and the commutator had been almost hot enough to melt the solder. I had a number of kinds of brushes previously, among others the _____ Company's best graphite, but these were only slightly better and wore out very fast. From the length of time that these brushes have been on, I should estimate their life at about three times the best we had previously obtained.

Kindly give me prices on your brushes.

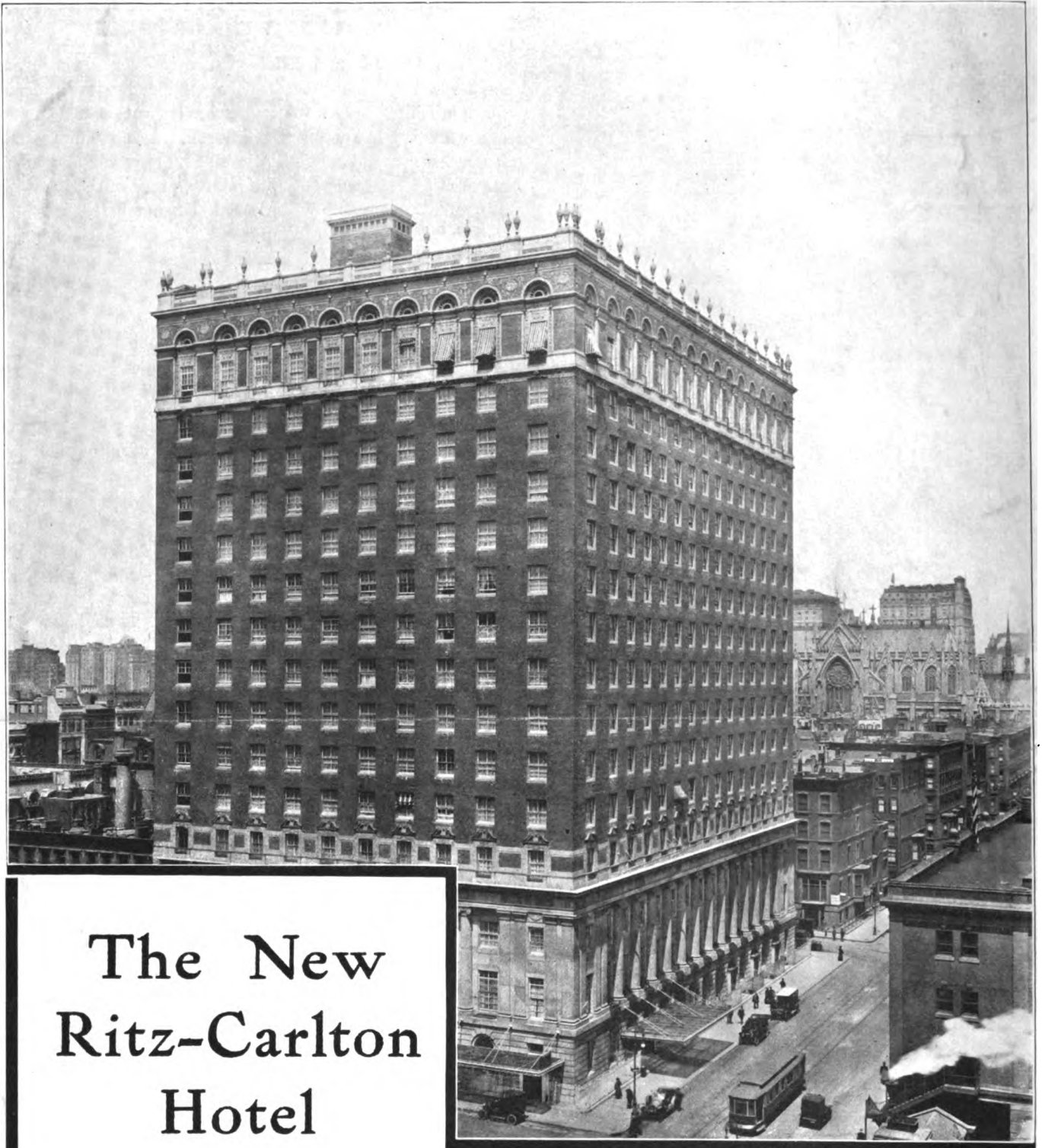
Yours truly,

WHAT DIXON'S FLAKE GRAPHITE ACTUALLY DOES AND NO OTHER LUBRICANT CAN DO

Friction is due to the microscopic roughness of the contacting metals. No matter how smooth the surface may appear to the eye, it may be found under the microscope to resemble a nutmeg grater.

The function of oil or grease is to reduce friction and prevent damage to the surfaces by intervening a film that will separate the metals. Perfect accomplishment of this result is almost impossible, however, for occasionally the film will be broken due to extra strain or lack of constant replenishment, and the rough surfaces will gouge into each other.

Dixon's Flake Graphite, when fed to such surfaces immediately proceeds to fill in the microscopic depressions and becomes pinned on the pointed projections. A very thin and efficient bushing is thus formed that prevents actual contact of metal to metal. This not only results in reducing friction but actually prevents damage to the metal surfaces proper. That's what Dixon's Flake Graphite does every time.



The New Ritz-Carlton Hotel

Located at Forty-sixth Street and Madison Avenue, the general plan of which is said to be in its effect similar to the Carlton and Ritz Restaurants of London, is a notable addition to New York's many magnificent hotel structures. In keeping with the generally evident construction plan of using only materials of proven and known merit and which offer permanent and lasting value,

DIXON'S SILICA-GRAPHITE PAINT

was used to protect the five thousand tons of structural steel. Warren & Wetmore, Architects; Balcom & Darrow, Consulting Engineers; Levering & Garrigues Co., Steel Contractors; M. Reid & Co., General Contractors.

JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.

GRAPHITE

VOL. XIII.

AUGUST, 1911.

No. 8.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

WHAT ONE VOTE HAS DONE

The deciding vote cast by Vice President Sherman recently saved the Bristow amendment to the resolution to submit direct elections of United States Senators to the States.

General Jackson was elected Major General of the Tennessee Militia by a majority of one, and the victory of New Orleans, which resulted from that election, changed political history possibly for all time.

Martin Van Buren was defeated for confirmation as Minister to England by one vote, and that action made him President. John C. Calhoun, then Vice President, cast the deciding vote.

Edward Everett was defeated for Governor of Massachusetts by one vote. This took him out of the list of eligibles for President.

Thomas H. Benton was elected to the United States Senate by a single vote. This one majority gave him an opportunity to show his great powers and he remained in the United States Senate thirty years and was one of the great characters of history.

Kentucky came into the Union as a slave state. Henry Clay cast the deciding vote in the Constitutional Convention. Had Kentucky come into the Union as a free state then Missouri would have done the same, and there would have been no civil war.

Hayes was put into the Presidency of the United States by a single vote after the votes of Florida, Louisiana and South Carolina had been counted for him in the Electoral College, although cast for Samuel J. Tilden. Thus Tilden was cheated out of the Presidency by one vote and Hayes got the place.

The act of union of Scotland, Wales, and Ireland was passed by one vote.

The Walker tariff bill was passed in 1864 by the Senate by a vote of one. George M. Dallas, Vice President of Pennsylvania, cast that vote.

Speaker Champ Clark is full of reminiscences like the above and said he could mention fifty historical cases where one vote has made world history.

"A MAN should never try to keep any secrets from his wife. Some kind friend will come along and tell her, anyhow."

PRICE CONCESSIONS ON EXPORT TRADE

The *Iron Age* in an editorial takes up this old time question of goods being sold to the foreign trade at prices below those prevailing at home.

According to the *Iron Age*, one of its London exchanges finds fault with the same practice in Great Britain.

The question is so old, according to the *Iron Age*, that they refer to the case mentioned by the *Ironmonger*, not so much to comment upon it as to show that the issue is bound to come up wherever there is an inner and an outer trade. For a manufacturer to sell all his product at the price made by the sharpest competition he meets anywhere in the world's markets would seriously curtail his profits. It is one way of putting it to say that his home customers who pay his usual price pay for the concession he makes on distant business. They pay for it in the same way, let us say, in which they pay for the product he sells to concerns from which he is unable to collect anything—the way, in fact, in which they pay for every other expense of his business. There is a question of expediency in all these concessions to secure distant foreign trade. If the industrial countries of the world were able to parcel out the business so that the producing country nearest a given market would supply that market the whole matter would be simplified. Some such arrangement is aimed at now and then, but it is exceptional. The web of the world's trade is so tangled and political and national lines so connect widely separated countries, that economic considerations are often a small factor in determining the placing of an order.

DIXON'S SILICA-GRAPHITE PAINT FOR ROOFS

Considerable has been said and written relative to graphite and carbon paints for tin roofs. In view of the statement made that the iron used in American tin is not equal to the imported iron, it has been claimed that carbon paints should not be used for roofs. The following letter may have some bearing on the matter:

"Five years ago last October we gave Dixon's Silica-Graphite Roof Paint a trial and painted the roof of our house. I am sorry to say the roof needs another coat now, although I think it would have lasted a couple of years longer had it not been very roughly used last winter by workmen who were putting a new cornice on the house. I think the roofing paint that will last from five to ten years is good enough for me, and I wish that you would give me your best price on about fifteen gallons."

DIXON's graphite publications sent free upon request.

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

President—GEORGE T. SMITH
Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
Ass't Treas. & Ass't Sec'y—J. H. SCHERMERHORN

DIRECTORS:

GEORGE T. SMITH	WILLIAM H. CORBIN
GEORGE E. LONG	EDWARD L. YOUNG
WILLIAM MURRAY	HARRY DAILEY
WILLIAM G. BUMSTED	

OFFICES AND SALESROOMS:

NEW YORK SALESROOM, 68 Reade Street.
PHILADELPHIA SALESROOM, 1020 Arch Street.
SAN FRANCISCO SALESROOM, 145 Second Street.
CHICAGO OFFICE, 1324 Monadnock Block.
BOSTON OFFICE, 648 John Hancock Building.
PITTSBURG OFFICE, Wabash Terminal Building.
ST. LOUIS OFFICE, 501 Victoria Building.
WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
BALTIMORE OFFICE, 1005 Union Trust Building.
BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.

EUROPEAN AGENTS

Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

smooth writing quality of a Dixon Lead Pencil. To properly and effectively woo the muse things must run smoothly, and what is smoother or more thought-inspiring or runs in better rime than the lead of a Dixon American Graphite Pencil?

IS BUSINESS VITALLY DEPENDENT UPON ADVERTISING?

What would happen to the business houses, the factories and mills of the United States, should every magazine, newspaper and trade paper cease publication? This may seem an idle question, yet it had a serious aspect to Chicago department stores on the occasion of a recent strike on a Chicago newspaper, when all the newspapers came out one day without any advertising. It is reported that on the day in question the Chicago shopping districts had a deserted appearance characteristic of a holiday. Business streets customarily thronged with buyers were practically empty. Listless clerks idled away the hours behind unfrequented counters. The street cars that were usually crowded with women purchasers at certain hours carried a bare handful of passengers. It would seem from this that advertising has become vitally necessary to business existence, and the merchant or manufacturer who endeavors to get along without it is out of step with modern requirements, and cannot hope for success unless his business is unique among the business of the country.—*American Printer*.

SAVING THE PENNIES

It seems rather small business and not worth great while to take the one cent or two cents on each dollar's worth you buy in the shape of the 1% or 2% discount offered you for cash, but to the Joseph Dixon Crucible Company these discounts, in some cases being as low as two cents or six cents, amounted in 1910 to a total of about twenty thousand dollars.

This matter of discount and the one of interest is not as seriously considered as it should be.

Henry Ward Beecher once said in a sermon that interest was a master or a servant. If you choose it as a master then each morning when you wake you are a poorer man than when you went to sleep. If you make interest a servant it will work for you all the time and you will have the satisfaction of knowing when you wake up in the morning that you have to your credit more money than when you went to sleep.

FLAKE GRAPHITE FOR INNER TUBES

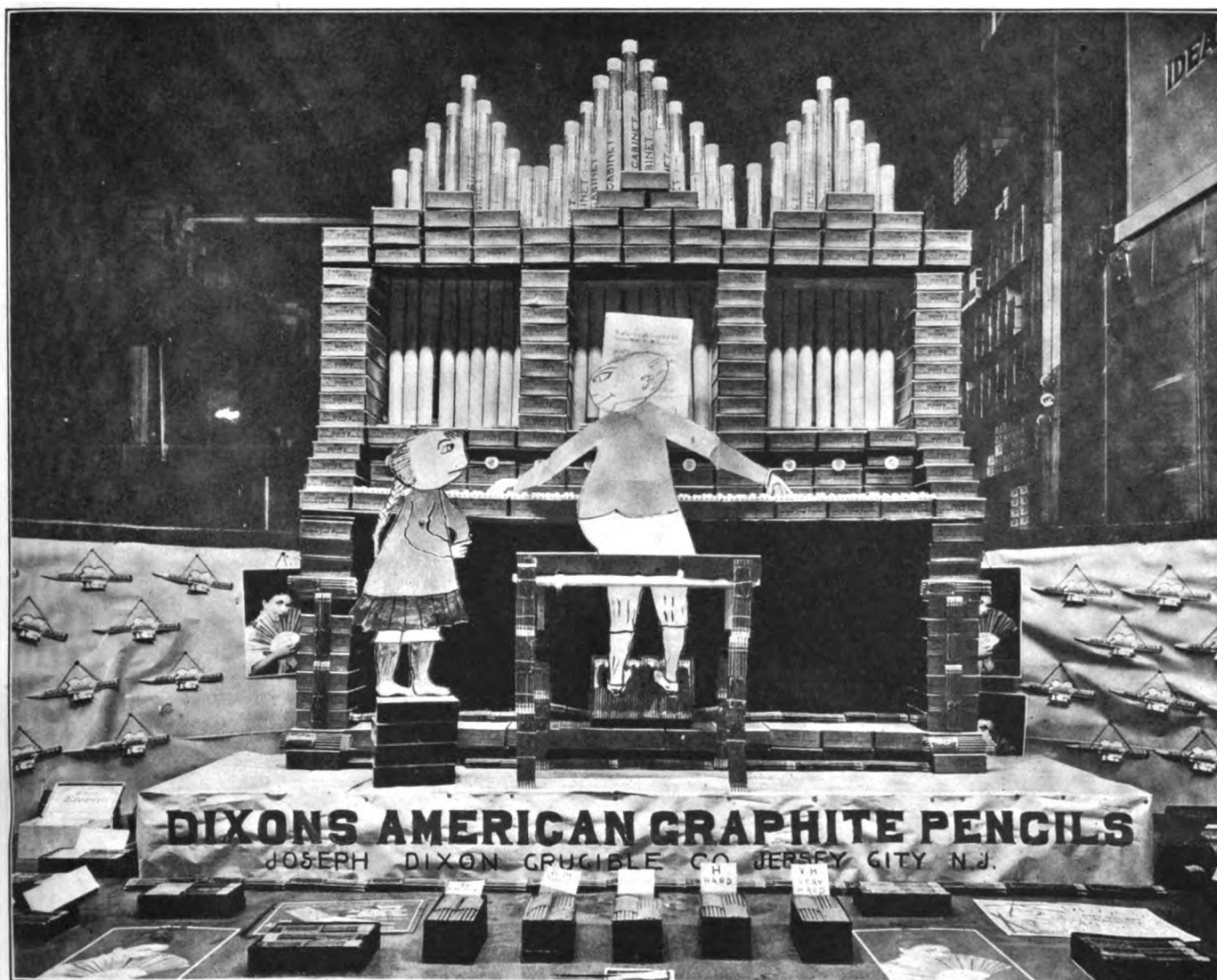
According to an experienced motorist, flake graphite is more suitable as a tire lubricant than the widely used talc or soapstone. Being chemically inactive, it is claimed to have no deleterious effect on rubber, and among the virtues attributed to it may be mentioned that it is more lasting than soapstone, that it more effectively prevents chafing and heating of the inner tube and it helps to make the fit more snug in the casing.—*The Auto Clipper*.

FAILED WITH PEN AND SHOVEL

A Chicago man thinks himself a poet and for all we know he may be one, but the editors out that way think him a writer of verses and they turned him down with soft words and gentle ways.

Enraged, he concluded to try the shovel where men were shoveling gravel at a wage of three dollars a day. At the end of four hours of this honest toil, weariness, or something else, prompted him to let his shovel drop and offer for sale a few poems to the foreman of the gang. He was instantly "fired." It may be his verses would have been greatly improved if he had been free from all the petty annoyances that go with pens of all descriptions and had had the benefit of the

"WHEN a fellow removes the cigars from his waistcoat pocket before embracing her, she may be justified in her suspicion that she isn't the only girl he has ever kissed."



ADVERTISING OF THE GEORGE G. FETTER COMPANY

The window display bears the same relation to the success of a retailer as the traveling salesman does to the success of a manufacturer or a wholesaler. Both create "first impressions;" both reflect the character of what's behind them and it is as necessary for the window to be "well dressed" as it is for the salesman, for both "show the goods."

The simile is interesting and almost innumerable comparisons come readily to mind, but our subject is to discuss a practical example of window display, and the "silent salesmanship" in general of a firm who thoroughly believes in the "power of publicity."

Mr. J. Frank White is the able and enterprising advertising manager and also a director in the Geo. G. Fetter Company, the large and well known wholesale and retail stationers of Louisville, Ky. Throughout the country Mr. White is known for original and novel advertising ideas, particularly in the way of window displays. Our readers will appreciate his ability along this latter line of auxiliary advertising by studying the accompanying picture, a display of Dixon's American Graphite Pencils. This is a clever conception of Dixon's well known Organ Assortment, an illustration of which appears on this page. The material used in the construction of this ingenious display was limited to paper, cardboard and Dixon's pencils.

The Organ pipes are mailing tubes painted to resemble Dixon's "Cabinet" Pencils. It is small wonder that Mr. White possesses so enviable a reputation when displays, such as this, are, it is said, almost "everyday occurrences."



In connection with the advertising of the Fetter Company, it may be interesting to relate a recent accomplishment of which they are justly proud. On May 31, 1911, the Fetter Company, with the co-operation of several manufacturers,

published in the *Louisville Herald* an entire section of sixteen pages devoted to the products of these manufacturers, for whom in that territory the Fetter Company are the distributors. It is almost unnecessary to state that such a broad use of printer's ink excited a flood of comment and aroused a wide-spread interest which no doubt proved to be a profitable source of sales.

A feature of this spread was the individual treatment of the various products, for each of which a special advertisement was designed. Another feature, the special articles about the store, its policies, the owner and his interesting career, deserve especial commendation for their newsy and entertaining character.

In one of these articles, Mr. George G. Fetter, the head of the firm, who was born in Louisville in 1857, tells of his success and how it was obtained and his advice to young men is extremely instructive and practical. As a young man, Mr. Fetter spent several years in the iron trade, during which time he was away from Louisville and was married in Chicago to a girl of his native city. When the opportunity came to start in business for himself he returned to Louisville and with a capital of \$500 started the small print shop which by hard and persistent work he has developed into the prosperous house of today.

Mr. Fetter is an enthusiastic lover of Louisville and is a member of several clubs and organizations, both fraternal and commercial. He is the owner of a power plant, the history of which is a story in itself. His two sons, both of whom are with him in business, are said to be "chips of the old block," and thus the future growth and prosperity of the Fetter Company is assured.

THE MAN ON THE FENCE

To the man on the fence, the user of graphite as a lubricant indicates a man of judgment. When that user is a man making use of Dixon's Flake Graphite, it indicates a man of discrimination, unless he has been fortunate enough to use the right graphite the first time.

To the man who knows, there is a marked difference between graphites. We are told there is a proper time for all things, and it is equally true there is a proper graphite for lubricating purposes. It is not the graphite that is proper for lead pencils, nor is it the graphite that is proper for crucibles, nor is it the graphite that is proper for other uses which should be used for lubricating purposes.

The proper graphite to give the very best results as a lubricant should be an ideally thin, tough flake. It may be a large flake or a microscopically small flake, as occasion requires, but it must be a flake.

The self-evident reason is this: All surfaces, no matter how carefully machined, when viewed under a powerful magnifying glass, are seen to be full of elevations and depressions.

The thin flakes of graphite are distributed by the oil or grease over the bearing surfaces and build up, as snow flakes build up, all the microscopical irregularities until there is a veneer-like coating of graphite of marvelous smoothness and endurance.

Flake graphite, and flake graphite only, can do this. All amorphous or extremely fine graphite is washed or squeezed

out with the oil or grease as anyone can readily understand. It so happens that Nature in her deposits of graphite, saw fit to place in the Ticonderoga mines of the Joseph Dixon Crucible Company the thinnest flake graphite known to the whole world.

Of the vast quantities of graphite imported from Ceylon, where are found the most extensive mines of pure flake or foliated graphite, not any is found equal to Dixon's, and Dixon's equals the choicest Ceylon in purity.

The result is that after long years of hard work Dixon's Flake Graphite is the standard for value as a lubricant and is known in all parts of the world where machinery is employed to do the work of man.

MAUD AND THE AEROPLANE

Maud Muller, on a summer's day,
Was in the meadow raking hay.
She always had enjoyed good health,
But had a hankering for wealth.
Her cheeks were red, her eyes were brown;
She longed to live in the far-off town.
She wished she might be richly dressed,
And circulate among the best.
The judge came sailing up the lane,
Upon his nice, new aeroplane.
Below him he beheld the maid,
And tried to stop, and swooped and swayed.
He ripped a top rail from the fence,
And talked as if he had no sense.
The engine got beyond control,
The judge lost his immortal soul.
Maud stood there with a sickly grin,
Until he hit her with a fin.
"My Lord!" she yelled, and ducked away;
The judge lit on a pile of hay.
She hurried where the spring gushed up
And filled her little old tin cup.
At first she thought the judge was dead,
But she splashed the water on his head.
He looked upon his aeroplane
And said some things that gave Maud pain.
At last he rose, and with a frown
He started for the distant town.
Then, bringing himself to a halt,
He said, "This, girl, is all your fault.
If you had not been raking here,
I'd have stayed in the atmosphere.
You've cost me dear and spoiled my sport;
I'll fine you for contempt of court!"
He then went onward up the lane,
And Maud returned to work again.
She gazed upon his wrecked machine
And said, "Alas! what might have been!
"Ah, well, in heaven we'll all have wings!
And not depend on such fool things!"

—*Chicago Record-Herald.*

"THE widow is entitled to her third, but she must get her second first."



WILMINGTON, N. C., WATER TOWER

As a rule the water tower is an uninteresting structure, whose appearance is made even more commonplace by surroundings of a more or less dismal nature.

Those who are, however, interested in the subject will agree that the above photographic reproduction of the Wilmington, N. C., Water Tower makes a most pleasing and attractive appearance both as to mechanical design of the tower itself and the surroundings. It is therefore with good reason that great credit is reflected upon Mr. James Nisbet Hazelhurst, the well known consulting engineer of Atlanta, Ga.

Erected by the R. D. Cole Manufacturing Company, Newnan, Ga., this tower of six columns, surmounted by a tank with capacity of 150,000 gallons, was completed in 1910 and then painted with Dixon's Silica-Graphite Paint as specified.

ONE reason some people can't rest is because they don't work enough to become tired.—*Economic Advertising.*

A MAN'S SONG

I've washed up the silver and dishes,
I've made all the beds for the day,
I've finished preparing the fishes
We ordered for luncheon today;
The floors have been swept, and the parlor
Came in for a clean and a wipe,
When breakfast was eaten the rugs were all beaten—
And now for a whack at me pipe.

I've polished the mirrors and dusted
The cupboards—they needed it, too—
And mended a chair that was busted,
And blackened the range and the flue,
I've hooked up the waist of the missus,
She's off for a lecture on Kneipp,
The week's washing's over, and I am in clover—
And now for a whack at me pipe.

—WILLIAM WALLACE WHITELOCK.

COLORING COFFEE AND TEA WITH GRAPHITE

Inquiry comes to us from Cuba concerning the use of graphite for giving a uniform blue tint to coffee and a further question as to whether graphite so used would prove poisonous or harmful to the health.

We made reply that graphite has been used not only for giving good color to coffee but also for giving a good color to tea and that coffee or tea so colored was not made either poisonous or harmful; that graphite is as pure and as sweet as charcoal; in fact, it is one of the forms of carbon to which family charcoal belongs.

Furthermore, it may be that coffee polished with graphite will absorb less moisture and be kept in a better state of preservation. Of that, of course, we do not know, but that would be our opinion.

CANNOT UNDERSTAND WHY ANYONE SHOULD USE SO-CALLED GREASES

Mr. H. R. Basford, a prominent automobilist of San Francisco, sends us the following interesting letter in reference to the Dixon Graphite Grease No. 677.

"Replying to your esteemed favor of the 13th inst. in regard to the success I have had with your No. 677 Graphite Lubricant in my differential, wish to state I have used this three and one-half years in one auto, have never yet replaced a gear, either differential or driving. I have put five pounds of lubricant into differential housing once a year when I pulled my car down for overhauling and I then forgot the differential entirely for the rest of the year so far as lubricant is concerned. I cannot understand why anyone should use so-called greases for oiling any part of auto. I use your preparation even in my grease cups."

IT IS well said that a chain should be thoroughly cleaned and thoroughly lubricated and kept free from dust and grit, if that chain is expected to transmit power to the best advantage and to have long life.

Clean the chain thoroughly with gasoline or kerosene, get a cake of Dixon's Graphite Chain Compound, put it in a pan, place the pan where the compound may be melted, place the chain in the melted compound, let it remain there for a few minutes until the compound has had time to find its way into all of the bearing parts of the chain, then remove the chain, let the excess compound drip off, wipe the chain and put it on the machine.

A treatment of this kind will carry the finely powdered graphite to all the bearing parts of the chain, keeping them perfectly lubricated.

HELP!

The motorist emerged from beneath the car and struggled for breath. His helpful friend, holding the oil can, beamed upon him.

"I've just given the cylinder a thorough oiling, Dick, old man," said the helpful friend.

"Cylinder," said the motorist heatedly, "that wasn't the cylinder; it was my ear!"—*Popular Mechanics*.

WHAT HAPPENS TO DEACONS

An Explanation by H. F. FRASSE

(Edison Electric Illuminating Co. of Brooklyn)

Just now in GRAPHITE I have read
Of Deacon Norris, he is dead:

It must be true, for sure it's right,
Because so stated in GRAPHITE.

The Bulletins attracted scores,
Who read the notice on church doors:
That he was sick, might pass away,
And might not live another day.

Said one, "It's sad, I really fear,
That we must lose our Deacon dear:"
Another with a saddened face,
Did wipe away of tears a trace.

"Now list to bell, the Deacon's dead;
Just slept away in his brass bed:
The shiny bed of hollow brass,
The Deacon's gone, Alas! Alas!"

Again around the doors they stood
In darkness read the best they could:
"That Deacon, he had gone to heaven,"
And clock it showed it was eleven.

On Saturday the word came back:
No sign there was of Deacon's track.
A search was made in "Heaven's Ground,"
But Deacon's footsteps weren't found.

List then, my friends, if you would know;
T'were better if you looked below;
For there it's dark, you must look sharp;
As there the dweller has no harp.

By this I'd have you understand,
None there do play on harps by hand:
For when arrived, and paid the toll,
The D——l starts them wheeling coal.

But even then, task might be light
Were bearings greased with "Best Graphite,"
There all must work and none can rest
Make burden light, "Use Dixon's Best."

When Charon paddled through the Styx,
He saw the Deacon at his tricks:
Said Charon, "Deacon! Step aboard!
And come alone, leave there your hoard!"

The Deacon looked and did deplore
He had to leave his gold on shore.
So then into canoe he stepped,
And raised his voice and loudly wept.

The Deacon's gone, he plays no more,
At Five Hundred on the famous Carteret Four,
For relatives he leaves some fun
To fight in court about his "mun."

"If you want to be up with the lark in the morning, beware of the swallows at night."

GRAPHITE AND SOME OF ITS USES

By L. H. SNYDER

(From "Loco," May, 1911)

(Continued from July GRAPHITE)

A mechanical engineer, who is a friend of the writer and now much interested in the subject of lubrication, tells of his first experience with graphite as a lubricant. At the time in mind he was a special apprentice for one of the large electrical companies. At that time some large electrical units of about 5000 K. W. capacity were being constructed which taxed the testing room to its utmost. There was a line shaft supported from a gallery above the main floor which would run hot in spite of any kind of grease at hand. As the test was a heat run of twenty-four hours, a shut down was not to be tolerated under any circumstances. After a short run conditions became so bad that it was necessary to have a man with a grease bucket go from bearing to bearing and fill them up. In fact he had nothing to do but look after these bearings. There was a drip pan underneath for catching the waste oils and in trying to shift a belt it was tipped; of course the men underneath were showered with grease and oil. This seemed to arouse the foreman and he sent the young apprentice who tells the story for some flake graphite, which he mixed with oil and applied to the troublesome bearings. Needless to say, the man with the grease bucket soon lost his job and everything was again running in good shape. You may have had similar experiences in a slightly varied form.

It is a common fault not to give the proper attention to the dangers of hot bearings. Of course we all get busy when an engine bearing heats up because if not properly taken care of it means a shut down. What I have in mind particularly is the line shaft bearings in isolated places. I know instances where fires have come from bearings sparking, particularly where the air is laden with combustible material, such as in flour or powder mills. Do not use graphite only in emergency cases, but feed small quantities of it constantly. The very conditions which sometimes make the use of graphite imperative cannot exist if flake graphite is regularly used. There are numerous devices on the market for continuously feeding dry graphite or graphite and oil to cylinders, valves and bearings, the use of which insures perfect lubrication and freedom from all friction troubles, provided, of course, that the right kind of graphite is used.

Graphite reduces friction of delicate parts quite perceptibly, as touched upon previously and as shown by the following quotations from Professor Goss' tests:

"A combination of graphite and lard oil makes up a lubricating mixture which, when applied to ball bearings, will accomplish everything which lard oil alone will do and which at the same time will give a lower frictional resistance of the bearing and permit a large increase in the load which it may be made to carry.

"An oil as light as kerosene, when intermixed with graphite, will be converted into an effective lubricant for ball bearings when operated under light or medium heavy pressure.

"Even so viscous a lubricant as vaseline will better perform a given service in the lubrication of ball bearings when supplemented by small amounts of graphite. The bearing to which

the mixture is applied will work with less frictional resistance and will carry a heavier load than when vaseline alone is used.

"The admixture of graphite with either a liquid or viscous lubricant serves both to reduce the friction and to increase the possible load which a bearing thus lubricated can be made to carry."

In this test Professor Goss used flake graphite.

There is an inclination to feel that metal surfaces are well lubricated if they have a bright, mirror-like appearance. On the contrary, well lubricated surfaces have a dark, velvet-like appearance as is shown in what Messrs. Wells and Scott-Taggart say in their book, "Cylinder Oil and Cylinder Lubrication:"

"In order to satisfy themselves as to the working of an oil, most engineers open the cylinders at intervals and note the condition of the surfaces. Satisfaction is generally felt if they find the inside of the cylinder polished like silver, or if it has a bright smooth surface, "like a mirror," as some express it. Now, this is not by any means the condition the cylinder ought to be in, if it be well lubricated with oil alone. Suppose an engineer found on opening the cylinders of his engines, that bright streaks existed, he would conclude at once that the bright spots were the result of friction; strange to say, if he found the whole surface of his cylinder polished, he would not think it was friction.

"A well lubricated cylinder ought to present a rather dark-looking surface, smooth, but with no signs of bright polish even if coated with oil. The slightest rubbing with a polishing rag would produce a bright surface on such a cylinder, thereby proving that the lack of a polish is due to the absence of friction."

In summing up this little discourse on graphite lubrication it may be said that the advantages of graphite as a lubricant are:

Friction lowered.

Better and smoother operation.

Shutdowns prevented.

A reduction in the amount spent for oils and grease with highest efficiency obtained.

Not affected by acids, alkalies, or temperature conditions, thus giving it an unlimited field.

Not being combustible, it will greatly lower the fire risk.

WIRE ROPE LUBRICATION

Wire rope is kept free from deterioration and retains its maximum strength only as long as it is kept in its original condition. As soon as the rope is put into service and wear and corrosion begins to act, something must be done to counteract these weakening agencies or the heavy expense of frequent renewal will occur.

Wear is of two kinds; internal and external. Internal wear results from the rubbing of the strands and wires upon one another in bending over the sheaves and drums, and from kinks and bends. External wear is caused by the slipping and rubbing of the rope in the groove as it winds and unwinds about the drum and over the pulleys. Corrosion of the rope results from exposure to moisture, gases and such influences.

The one most perfect source of protection against both wear and corrosion is flake graphite, which fills every requirement. It possesses the necessary body to protect the surfaces of the rope and to take the wear. It penetrates to the inner-

most strands, keeps them well lubricated, and thus minimizes internal friction. Being insoluble in water and unaffected by acids, alkalies, or corroding atmospheric conditions, it "stays" with the rope and guards it against these damaging influences. Most manufacturers of wire rope recognize the value of graphite and employ it as far as possible in the making of the rope's core.

GRAPHITE IN BOILERS

One of the engineer's greatest troubles is lubricating oil getting back into boilers. The little globules of oil become attached to the metal and oil being a poor conductor of heat, the particular spots coated with oil become much hotter than adjacent surfaces with the result that scale first forms there, and a building up process is started. Flake graphite, as pointed out, if used as a lubricant allows of less oil being used, and if some graphite does get by the separator and condenser, it will be a help rather than a detriment in that it is a very good conductor of heat. When metal surfaces are coated with it there is practically no chance for scale to firmly attach itself and that which is formed is easily dislodged and crumbled.

ELECTRICAL APPLICATIONS

Graphite plays a very important part in the electrical field because its high electrical conductivity combined with its softness makes an ideal combination for graphite brushes. When these are used the commutator takes on a dark brown polish so much desired by electrical engineers, no high spots appear with the attendant bad sparking. Graphite is also used for making batteries, electrodes, resistance rods and for various special uses, such as the plungers or pistons of arc lamps.

DIXON'S "FIVE HUNDRED"

Our headline is in reference to a new pencil, whose merits are destined to not only make it the card players' favorite, but popular with all who are in sympathy with the "new efficiency" movement.



The game of "Five Hundred" is being extensively played throughout the country and the new Dixon pencil of that name is specially prepared and recommended for use in marking score cards. The "Five Hundred" is of full seven inch length, hexagon shape, sharpened and finished in a delicate blue. The lead is of a deep, rich black. The "Five Hundred" will be of benefit to both those who do and do not (particularly the former) remember the value of suits, for these are stamped on the pencil in gold.

Packed with each dozen in a box are cards of rules of the game. Six boxes in a carton. Price on application.

THAT well known Western traveler of the Dixon Company who bowls 240 to 270 out West and 100 to 117 when he is in the East, sends us this question which we must leave to our St. Louis or Chicago or possibly our Frisco branches to handle.

"Did you ever notice in those large Western towns, where there are more men, women and children than there are inhabitants, that the population is greater than in small Eastern towns of the same size where there are not near so many people?"

CONNECTICUT

We have heard so much said about Connecticut selling wooden nutmegs and palming off shoe pegs for oats, that it is pleasant to hear some decidedly better things about her.

We are told that Connecticut farms pay a larger profit than the farms of any other State in the Union, except Rhode Island and Massachusetts.

We are told that Connecticut raises more corn per acre than any other State in the Union.

We are told that the value of Connecticut's rye per acre is larger than that of any other State in the Union.

We are told that Connecticut raises more potatoes for her size than any State in the Union, except New York and Rhode Island, and that only six other States raise even one-half as much for their size as Connecticut.

We are told that Connecticut has more dairy cows for her size than any other State in the Union except New York, Massachusetts, Vermont and New Jersey.

PLAIN-SPOKEN WOMAN

The Fairy Godmother Tells What's the Matter With the College Boy

They had sent for the fairy godmother in a great hurry. Disquieting stories concerning her favorite godson were worrying his parents.

The boy was at college, in debt, in bad company, a reveler, an entertainer of chorus young women.

It was even rumored that he intended to marry a spidery dancer.

The godmother listened with an unmoved face.

"Well?" she said.

The worried mother stared at her.

"Why, godmother," she cried, "don't you remember how you promised across his cradle that he should enjoy health and happiness and be an honor and comfort to us?"

The godmother nodded.

"I remember," she said, "and there was only one thing that could by any possibility have interfered

with this programme."

"But you didn't name it?"

"There was no need—and at that time there was no danger."

"And what is the fearful thing," cried the mother, "that has come between us and our boy, that has blinded him to love and duty, that has so shamefully lowered his high standard?"

The old lady drew her scarlet cloak around her.

"It's money," she harshly replied, "too much money! I've no patience with you. Send for the boy and set him to work! Oh, you foolish parents!"

And pulling down her silk hood she angrily strode away.

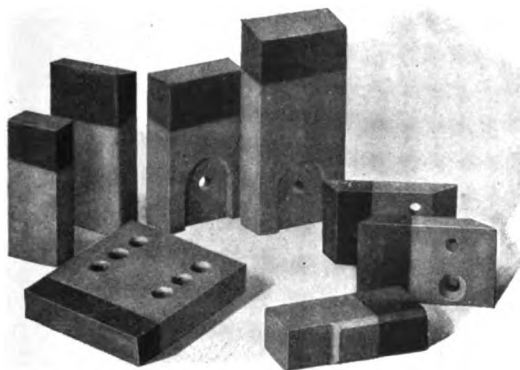
—Cleveland Plain Dealer.

"How often does your road kill a man?" asked a facetious traveling salesman of a Central Branch conductor the other day.

"Just once," replied the conductor.

DIXON'S graphite publications sent free upon request.

DIXON GRAPHITE BRUSHES

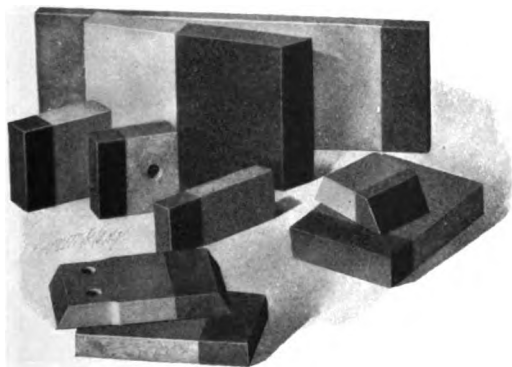


From time to time we have printed testimonials from satisfied users of the Dixon Graphite Commutator Brushes, but have made little mention of these brushes otherwise. Perhaps it would not be out of place to reiterate a few of the reasons that have made these brushes so popular.

Formerly when engineers had to depend upon carbon brushes for their dynamos and motors, there was no end of complaint that the brushes sparked excessively and that the commutator was usually in a bad condition. The harsh nature of carbon caused the brushes to scratch the copper of the rapidly revolving commutator, so that it was only a question of a short time before the commutator was scored so badly that there was poor contact for the brushes and sparking resulted. Conditions always became worse instead of better.

With the Dixon Graphite Brushes, however, it is not possible for a commutator to be cut. On the contrary, if it is in good condition when the brushes are applied, it will soon take a dull, glassy polish. Their use prevents sparking and wear of the commutator. They are self-lubricating, free from grit, have good conductivity, do not gum the commutator, are tough and strong, and have very long life.

Graphite brushes are not recommended for some special classes of service, such as for electric railway motors, electroplating machines, etc., but in almost every other case they give far more satisfactory results than carbon brushes can possibly give.



As a rule, graphite brushes do not require so much pressure on the brush holder as do carbon brushes. In any particular case it is well to use as low a pressure on the brushes as will give good results, since the higher the pressure the more rapidly will the brushes wear down. However, the lubricating qualities of the Dixon Brushes prevent any damage to the commutator, even with higher brush tension. With proper attention these brushes will last as long as harder brushes, and they insure freedom from commutation troubles.

We make these brushes in almost any shape required and fit them with pigtails or shunt wires, if desired. It is preferable that orders be accompanied by samples or a sketch, having any special shapes or drilling fully dimensioned, so that no errors may occur in the factory; also state if they are to be copper-plated.

We will be pleased to give our opinion as to whether the Dixon Graphite Brushes are adapted for any particular machine, if we know the number of brushes used on the machine, the dimensions of the brushes and the number of ampères. Prices and further information will be gladly furnished upon request.

"NO MORE INTERESTING OR INSTRUCTIVE"

Who does not recall the phrase "Every Man His Own Printer," which graced the newspapers and magazines some years ago? Present conditions seem to warrant the phrase "Every Man His Own Publisher." There does not seem to be a business house, manufactory, organization or district that does not invest a large amount of its advertising appropriation in publishing and printing its own "house paper." The question has been raised whether the same money placed in the standard established publications would not bring better returns from an advertising viewpoint. California has been doing considerable advertising and the Sacramento Valley Development Association has just raised fifty thousand dollars by popular subscription for the purpose of booming the district. The Chico (Cal.) *Enterprise* takes a position that "the project of starting a Sacramento Valley magazine is the utmost limit of folly," and claims that "the average reader sets little store upon the printed message which comes to him gratuitously and unsolicited. Even when expensively gotten up, it is usually glanced at and laid aside. It is the paper or periodical for which one pays a nickel or a quarter and settles down to read through from cover to cover that is the really valuable advertising medium. Space in such a publication costs good money, but when judiciously bought and used, brings good results."

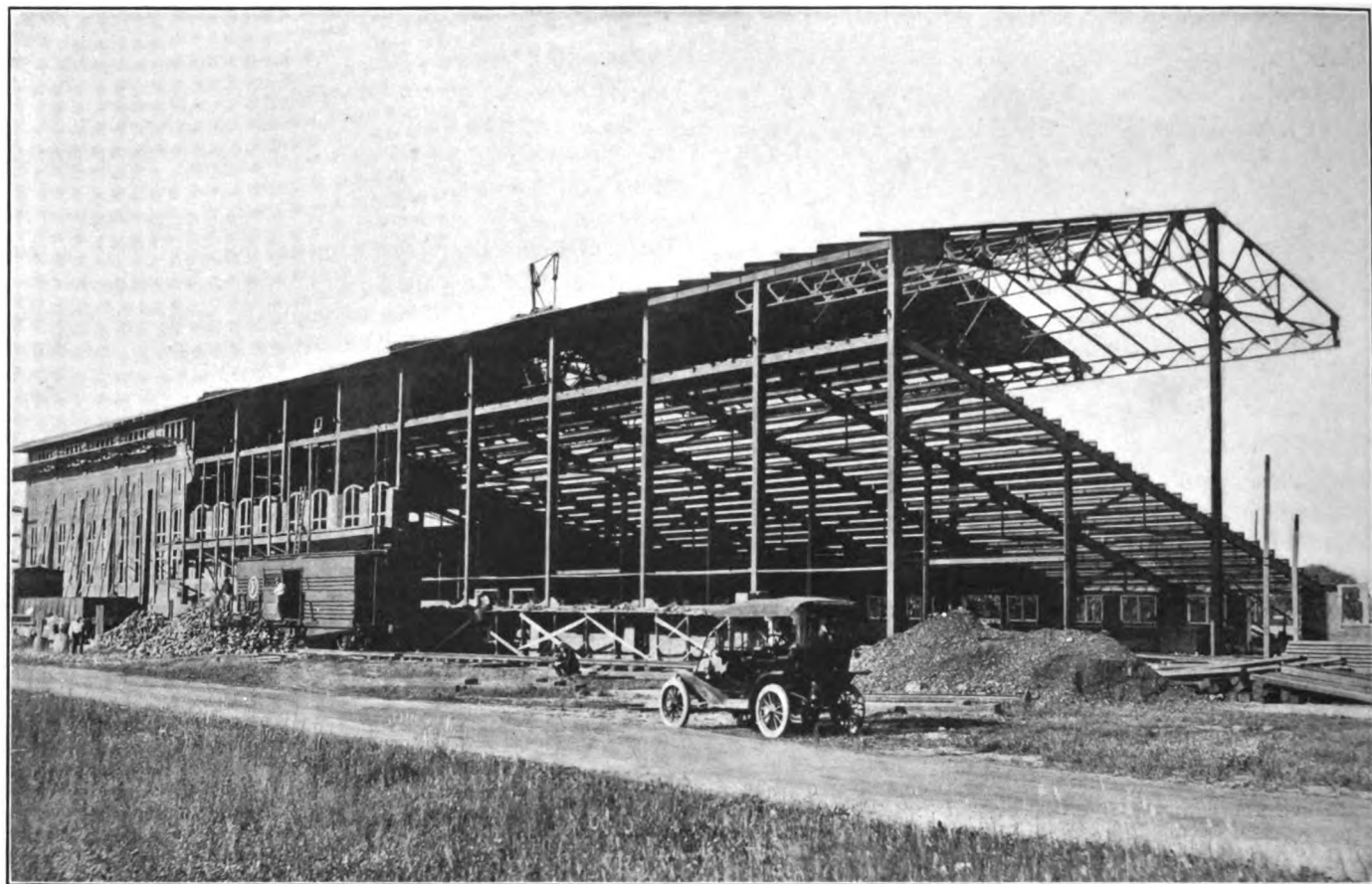
It is a fact which cannot be denied that money spent thoughtlessly and foolishly for booklets and house papers which are given away gratuitously and promiscuously is to some extent wasted. We have seen small house papers containing excellent reading matter thrown aside by the same person who would go to a news stand and pay ten cents for a little pocket magazine that was *no more interesting or instructive*. It is a well settled fact that a person values that which he pays for, and advertisements in a good trade paper or general magazine are for this reason valuable. This condition is realized by houses issuing elaborate booklets or catalogs, who do not send them promiscuously but by request from persons interested.

—*American Printer*.

THE other-people's-business man persisted in trying to extract information from a prosperous-looking elderly man next him in the Pullman smoker.

"How many people work in your office?" he asked.

"Oh," said the elderly man, getting up and throwing away his cigar, "I should say, at a rough guess, about two-thirds of them."—*Everybody's*.



GRAND STAND OF INTERSTATE FAIR GROUNDS

Although completed but comparatively recently, the Interstate Fair Grounds at Trenton, N. J., has been the scene of many a joyous occasion and has afforded many thousands of visiting pleasure seekers a splendid place to forget their "ever present troubles."

In no small way has the sturdy construction of its grand stand, erected by N. A. K. Bugbee & Co., contributed to the satisfaction and safety of not only the visitors but to the owners as well. The illustration above is a view of the grand stand when but partly completed. The steel contractors, the American Bridge Co., applied Dixon's Silica-Graphite Paint, Dark Red, for shop coating, and Dixon's Olive Green was used in the field by the erectors.

HABITS DIFFER

The late Bill Nye replied as follows to a correspondent who inquired about his habits and work of life:

"When the weather is such that I cannot exercise in the open air I have a heavy pair of dumb bells at my lodgings which I use for holding the door open. I also belong to an athletic club and a pair of Indian clubs with red handles. I owe much of my robust health to this.

"I do most of my writing in a sitting posture or in an auto-graph album. When I am not engaged in thought I am employed in recovering from its effects. I am very genial and pleasant to be thrown amongst.

"I dress expensively, but not so as to attract attention. In the morning I wear morning dress and in the evening I wear evening dress, and at night I wear night dress."

—*Harper's Weekly.*

THE RIGHT SPIRIT

Although we omit name of place and firm, nevertheless we think the following will be of interest to the readers of GRAPHITE:

"We are in receipt of your favor of the 24th inst. and note you have placed our little account in the hands of an attorney for collection, which of course we regret, but rather think you are excusable since we have been so negligent. Any way, since the attorney has not shown up at this writing we will not wait for him and now enclose check covering the amount in question, together with \$5.40 for which please send us 1½ gross of pencils No. 1803 by express.

"We thank you for your courteous treatment and will send you a few small orders from time to time, no doubt."

ONE night a couple of traveling salesmen arrived in a small Kansas town and found the hotel crowded. Not a room was to be had.

"I hate to disaccommodate you, gents," said the hotel proprietor, "but even the pool table's occupied. But, say, see that old church across the street? I bought it to build a new hotel on the site. If you don't mind, you can go over there and sleep in the pews. They're upholstered, and they ain't bad sleepin' in at all."

The tired pair decided to try it.

About one o'clock in the morning the hotel proprietor was awakened by the loud clanging of the church bell. He got up, roused the porter and told him to hurry over to find out the trouble. In a few moments the porter came back. "Well?" asked the owner, excitedly. "Party in Pew twenty-six wants a gin-rickey," was the answer.—*Everybody's.*

GRAPHITE AS A LUBRICANT

That graphite is a most valuable accessory to the solution of every lubricating problem is no longer doubted, but there still remain some misconceptions as to the best manner in which it should be used. A few words along this line then, may not be amiss.

It should be first clearly understood that graphite is not a competing product with oils or greases. Scientific tests and years of practical experience prove, however, that either oil or grease gives far better results when the correct proportion of flake graphite has been added to it. In other words, flake graphite stimulates the lubricating value of oils and greases, and by its use assures economical operation and highest efficiency. For best service, the Dixon Graphite Greases offered in the market should be used, as they contain a proper percentage of the celebrated Ticonderoga Flake Graphite, and the ingredients are thoroughly mixed. When an engineer makes his own graphite grease he seldom uses the right amount of graphite and cannot obtain a uniform mixture.

Graphite is offered to the trade in many grades, which are classified into two groups according to the physical structure of the particles, namely, flake and amorphous or powdered graphite. For lubricating purposes, however, it has been found that the flake graphite is far superior to the amorphous.

Flake graphite might be termed a positive principle lubricant, because it gets right at the cause of friction troubles. The minute irregularities that exist in every bearing surface are smoothed over, so that the co-efficient of friction is reduced to a minimum, and when Dixon's Flake Graphite is used, the result is quite permanent.

The small flakes are microscopic in thickness, but have sufficient size to cover several of the minute projections on the bearing surface and the pressure on the bearing pins the flakes fast, as it were, to the metal. It is therefore readily seen why the thin, smooth veneer of graphite is durable and why so small a quantity of flake graphite is required to keep a bearing surface in perfect condition. Oils and greases serve to carry the graphite to the metal surfaces and thus evenly distribute it over the parts.

It is a common fallacy to wait until a bearing becomes hot and then throw in graphite until normal conditions are restored. If a small quantity of the Dixon Flake Graphite were used at all times, there would be no hot boxes, for there can be no seizing or cutting of bearings in the presence of flake graphite. It is best not to try to feed graphite through ordinary oil lubricators, but there are numerous devices for continuously feeding graphite or graphite and oil, by the use of which perfect lubrication is assured.

It has been proved scientifically that friction losses are much reduced, and the carrying capacities of bearings greatly increased by the judicious use of flake graphite. Other advantages attending its use are: a marked reduction in the number of hot boxes and their kindred complaints; a reduction in the cost of lubricants, since less oil or grease is required; a saving in the wear of parts; the absence of explosive vapors; high temperatures do not affect it; more quiet running machinery; the prevention of shut-downs; and a saving in power.

Dixon's Flake Graphite is an ideal lubricant for compressors, steam, gas, hydraulic and electrical machinery and generally wherever friction occurs.

RUSTED VALVE CAPS

A great many cars operate for such long periods without requiring attention to the valve seats that when trouble does occur and it becomes necessary to grind the valves, it is found that the caps have become so firmly rusted into place as to make it impossible to remove them with the tools ordinarily provided for the purpose. Of course, in replacing these valve caps, or setting them in place at the beginning, the threads should be treated with some material which will prevent rusting and make their removal easy, no matter how long a period may elapse before it becomes necessary to do so. A treatment of heavy oil and fine flake graphite mixture to the threads of the valve caps will effectually prevent this rusting. If, however, they have become rusted through inattention to this detail, an easy way to start them is to run the engine sufficiently long for them to become hot and then to pour cold water or lay a piece of ice in the hollow usually provided for the wrench. Almost immediately after pouring in the water or applying the ice the wrench should be set in place and be given a sharp jerk or tapped with a mallet. It has been found that this method will almost invariably start the cap.

If shellac and graphite are not available, or there is not sufficient time for their application, beeswax can be applied to the rims and will serve as a very good *temporary* rust preventive. In applying the wax, the rims should first be heated slightly by a blow torch and a piece of the beeswax rubbed over them while they are still warm.

—*The Auto Clipper.*

CEDAR SAWDUST

For Poultry, Dogs and Other Small Animals

All bird dog owners living near the Dixon Cedar Mill in Florida, send to the mill for the aromatic cedar sawdust for use in their dog houses and report that it is a wonderful thing to keep down fleas and other busy bugs which operate to make a dog's life miserable.

We are reliably informed that there is nothing superior to cedar sawdust for this purpose. It makes an excellent bed, and while not a flea exterminator it keeps fleas down. The bedding, however, should be renewed every four to six weeks.

Some owners, and especially those of long haired dogs or of small dogs, find the idea a good one of putting the sawdust into bags and covering the floors of the kennel with these bags. It gives perfect satisfaction, is a sure preventative against fleas and tends to keep dogs in a healthy condition. Other users claim that the cedar sawdust is a great help in keeping the dog's coat clean and in nice shape and they are very much pleased with the results and do not find the bags necessary.

A SCHOOL TEACHER started on a trip a year ago across the Atlantic and up the Mediterranean Sea to the extreme end. When she returned in September, she had sailed in six different steamers. She had carried a Dixon Uncle Sam Pencil, No. 1241, which is finished in red, white and blue, to use for jotting down incidents of her voyage and whenever she used it in view of a native of any of the lands she was in, they would point at it and call out America!! and show her the greatest attention.



Yes Sir! 70 Heats!

This is an actual photograph of a No. 150 Dixon Crucible, taken after it had run for seventy heats in an oil furnace. The next best record made by a competing make under the same working conditions was only 41 heats.

This is by no means the best performance of

D I X O N ' S CRUCIBLES

They have been "making good" ever since Joseph Dixon invented the graphite crucible in 1827. Dixon's Crucibles have often advanced the pace that modern service has demanded of the crucible manufacturer. If you look for real economy in crucibles you will use Dixon's.

**JOSEPH
DIXON
CRUCIBLE
COMPANY**
**JERSEY-CITY
NEW-JERSEY**

GRAPHITE

VOL. XIII.

SEPTEMBER, 1911.

No. 9.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

NATIONAL ONE CENT LETTER POSTAGE ASSOCIATION

A large number of the business men of the country have banded themselves together under the name of the National One Cent Letter Postage Association, for the purpose of securing a one cent letter rate, a reform which would cut exactly in half the present postage accounts of large manufacturing and mercantile concerns.

Hundreds of business men have joined the association, which has its headquarters in Cleveland, O. It is a national movement, however, and Cleveland was chosen as headquarters simply because Charles William Burrows, its president, and George T. McIntosh, its secretary-treasurer, are residents of that city. The organization has members in every State in

report we find the following which may be of interest to readers of GRAPHITE:

"We were supplied by the Department with a copy of a daily periodical of which eighty copies are required to make a pound. Think of this in connection with the enormous deficit incurred in handling second class matter for which the government receives only \$8,174,000 per annum, though it is over two-thirds of the paid tonnage of the mail and the total expense account per annum is \$229,997,225. The government must receive and distribute eighty separate copies of this publication to eighty different subscribers before it receives the ONE CENT of revenue that accrues to it for each pound of second class matter handled. You can readily see that the cost of service in this instance is several hundreds times the receipts."

Mr. George T. McIntosh, the secretary-treasurer of the association, has previously in an address made by him called attention to some small magazines weighing only seven-eighths of an ounce each and requiring eighteen of them to weigh a pound, and this number had to be distributed by the government for one cent.

the Union and plans an active campaign at the winter session of Congress for the reduction of the present rate on all letter postage.

Every year the Post Office Department is making a profit of over \$60,000,000 on first-class mail matter. A vast deficit results from carrying second-class matter at one cent a pound, or \$20 a ton, while letters pay 84 cents per pound, or \$1680 per ton. The injustice of this is apparent to the business men who are seeking a lower rate.

This year Postmaster General Hitchcock, for the first time in seventeen years, declared a surplus for the Department. There is now in progress a general readjustment of methods of handling second-class matter and it is expected that a saving of millions more will result.

A short time ago the committee of the National One Cent Letter Postage Association made a trip to Washington and was shown several things that they did not know before, and was able to supply the Postmaster General with some pamphlets that proved of great interest to him, and that he had been on track of but not successful in obtaining. In the committee's



POSTMASTER GENERAL HITCHCOCK

During the month of May, 1911, an investigation in the way of sorting, counting and weighing all the mails was made by the Post Office Department and these records will be tabulated and the results placed before the postal commission. After this commission reports, legislation will be introduced in Congress bearing upon the various features of the postal question, including the movement for the one cent letter postage.

An active, business-like campaign is being conducted by the officers of this association, who have devoted their time to the work for the past six months without compensation. Every concern in the United States is eligible to membership. It means money to them

to join and secure the reform. Information and literature may be secured by addressing George T. McIntosh, Secretary-Treasurer National One Cent Letter Postage Association, 506 Chamber of Commerce, Cleveland, O.

"THE hobble skirt doesn't prevent women from jumping at conclusions."

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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 Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

PENCIL CEDAR

Every now and then an article appears in the various daily papers relating to the great dearth of cedar for pencil wood, with the result that every pencil manufacturer begins to receive letters from all parts of the country offering cedar for pencil wood.

The Dixon Company is not "lamenting the steadily increasing difficulty it has in finding the cedar which is so much the best wood for its use." Practically we know of no other pencil manufacturer who is doing any "lamenting."

It is true that the pencil manufacturers have been buying old cedar rails and cedar boards from the old barns of the farmers for the very simple reason that such wood, having been

exposed for many years to the elements, is in far better condition than new cedar. The new cedar carries a large amount of resinous matter and this resinous matter is very difficult and very expensive to get rid of, and when not thoroughly eliminated from the wood, tends to warp the pencils and to ooze out, marring, if not destroying the finish of the pencil.

Some of the editors of the great dailies are kind enough to offer the pencil manufacturers considerable advice on the subject. These editors tell us that the pencil manufacturers have lacked foresight, but possibly it is not too late to do what we should have done years ago, "plant anywhere from two to a hundred little cedar trees whenever we cut down a big one, or even whenever we want to cut down a big one and cannot find one to cut." It so happens that the pencil wood tree is not a tree that needs planting like an apple tree or a cherry tree. When one cedar tree is cut down a lot of little cedar trees at once spring up. In other words, it may be said that the cedar tree is a self-propagating tree. The only thing that the pencil manufacturer needs to do is to wait, and he is obliged to wait, until all the little cedar trees see fit to grow up and become big enough to be cut.

In the meantime the Dixon Company is on "Easy Street" in the matter of pencil wood, having at least fifteen years' supply of cut cedar and owning nearly seventy thousand acres of cedar land in Florida on which not a stick of standing timber has been cut for many years.

WHAT are we coming to in the mad scramble that incompetent people make to find subject matter for their papers! In one of the new automobile publications that has just appeared on the market, we note the statement under the significant head line "Technical Information," that chalk is a lubricant. We presume the writer believes that this is the reason why the end of a billiard cue is chalked so that it will slip on the ball and for the same reason that the approach of a bowling alley is chalked. We also know of some automobilists who have found it expedient to put chalk upon a slippery brake—probably to make it more so.

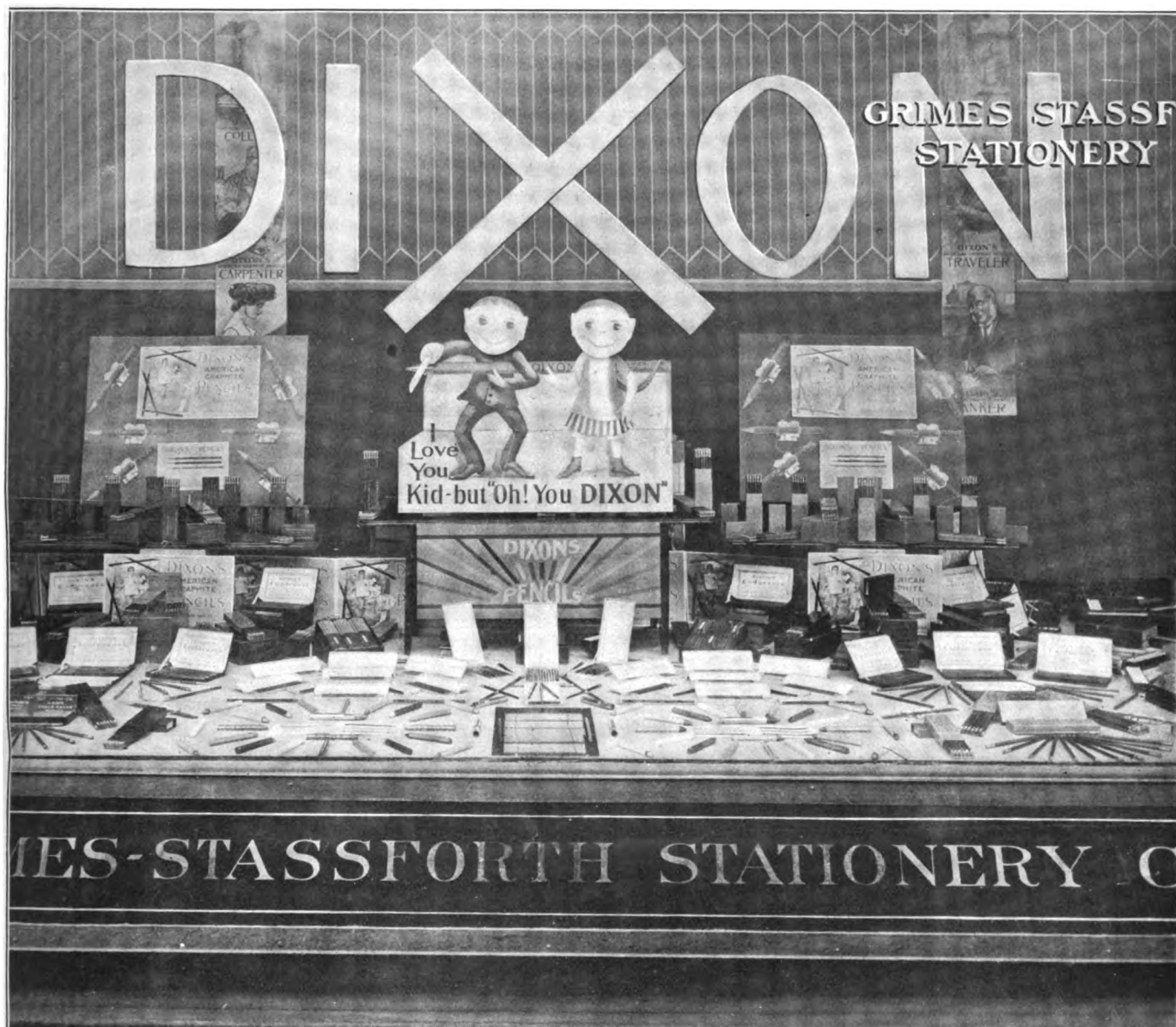
We presume the lubricating qualities of chalk is one of the reasons why one can write on a black-board for a long time without experiencing any fatigue.

In this day and age some people seem to think that all they have to do is to call a solid or a liquid a lubricant and that friction is a thing of the past. If our learned exponent of technical knowledge had called a banana peel a lubricant none of us would have taken exception, but when he calls chalk anything but chalk, it makes us rise up in righteous indignation. It is like saying black is white and white is black.

There is but one known solid lubricant and that is flake graphite—many others are called so, but are not.

"THE man who spends his years on earth in shallow enjoyment or selfish ease, careless of the world's sorrow and indifferent to its sin, blind to its finest beauties and most thrilling tragedies, moved by no great love, actuated by no high hope, stirred by no holy enthusiasm, is ignorant of all true life."

A FLAKE of graphite on a hot bearing is worth two in the can.



GRIMES-STASSFORTH WINDOW DISPLAY

We reproduce on this page the excellent window display of Dixon's American Graphite Pencils made by the Grimes-Stassforth Stationery Company, of Los Angeles, Cal.

This display easily escapes the conventional. The huge letters, spelling Dixon, though merely strips of paper, produce a novel effect and at once attract attention to the entire window. It is assumed that the Dixon Brownies, holding the center of the stage as usual, contributed their full share to the success of this display. The arrangement of the pencils, cards, boxes, etc., which form the balance of the display, is neat and pleasing.

The Grimes-Stassforth Company possess the natural advantage of an exceptionally well built and artistic window for their displays. Some idea of this may be gained from the picture.

Up in Canada, in the Cobalt region, where the Dixon Crucibles are kept in stock by the Mines Chemical Company, an inquiry was made by a farmer who wanted to buy a Dixon Crucible, stating that he thought it would make an excellent butter tub.

THEY ARE NOT ALL DEAD YET

We have just received from a party, whose name and whose post-office address it is not necessary to mention, the following letter:

"Will you kindly let me know by return mail what it will cost for you to make me a crucible and a retort with its receiver, suitable for transmutation of metals, mercury into pure gold. I am compelled to have these instruments and as soon as I can hear from you, will forward the order. The instruments must be large enough to hold two quarts of liquid."

WE MOVED THE BUILDING

Mr. H. Thurston Owens, Associate Editor of the *American Gas Light Journal*, 24 Pine Street, New York City, advises us that through the kindness of one of their correspondents, he received a copy of July issue of *GRAPHITE*, and noted that we had moved the Croisic Building from Fifth Avenue over to Madison Avenue. As this little feat of the Dixon Company does not seem to have been entirely satisfactory to our New York friends, we now move the Croisic Building back to where it originally was, corner of Fifth Avenue and Twenty-sixth Street.



B. & O. BRIDGE AT ROWLESBURG, W. VA.

At Rowlesburg, W. Va, last December, the old Baltimore and Ohio Bridge across the Cheat River was replaced by the new structure illustrated above. The actual time of rolling out the old and rolling in the new bridge was twenty-six minutes, although traffic was held up for four hours and seventeen minutes.

The old structure consisted of two separate single track bridges, each of two 160 foot spans. The new structure, largely the work of Mr. Francis Lee Stuart, chief engineer, consists, as is seen above, of two double-track spans. This bridge renewal, aside from the excellent mechanical methods employed, is interesting as strikingly illustrative of the constant increase of loading that has been going on for railroad bridges for nearly twenty-five years.

The McClintic-Marshall Construction Company applied three coats of Dixon's Silica-Graphite Paint to the new bridge, thereby preserving it from a future premature look of neglect.

DIXON's graphite publications sent free upon request.

"DONT SEND NO MORE MAIL"

The following is a copy of a letter received by our Credit Department, the name and address being slightly changed so as to protect our customer.

"Please dont send no more mail out here for this is not for Williams M. Warren at all. His address is R. F. D. No. 16, Box 873 Atlanta Ga do your all understand this launage I hope you all do. I would thank you all very much if you do so."

"PROSIT!" in Germany is religiously uttered by the companions of a man who is about to take a drink. This Latin verbal form, the general meaning of which is "may it be beneficial," is now, says the *Scientific American*, understood simply as the expression of a wish that the drink will agree with the drinker's constitution, but it originally implied the hope that the drink had not been bewitched.

DIXON's Ticonderoga Graphite Flakes—the best food for engines.



BERKS COUNTY TRUST COMPANY BUILDING

A large and impressive building is peculiarly appropriate for a trust company. Apart from its many other values, the strong and substantial looking building possesses the value of attracting attention and compelling respect. We may assume that such buildings often reassure the prospective client who is either naturally or unnaturally timid of banking institutions or of his money.

This is wandering from the subject, however, our main thought being to call attention to the recently completed Berks County Trust Company Building at Reading, Pa., an illustration of which appears above.

The architect and the man largely responsible for the fine appearance of this building is Mr. A. A. Richter of Lebanon, Pa. This building affords another example of the affinity between good work and good materials, as two coats of Dixon's Silica-Graphite Paint were applied to the structural steel by the American Bridge Company, the iron contractors.

The general contractors were the Geo. W. Beard Company.

DIXON'S graphite publications sent free upon request.

DISTANCES IN NEW JERSEY

The keeper of the general store in a New Jersey village was once asked how far it was to Skeeter Swamp.

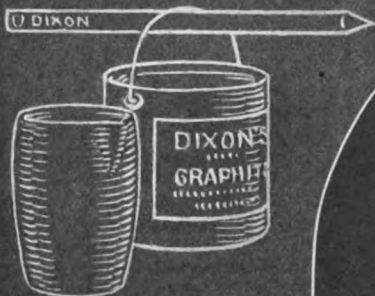
"Skeeter Swamp?" said the storekeeper. "Wall, I should say Skeeter Swamp wuz 'bout two whoops from here—or mebbe two whoops and a holler."

A man in Skeeter Swamp was asked how far it was to Flytown. The man shifted his quid to the left cheek and replied:

"Flytown, stranger, is about three chaws to the south—unless y're a fast chawer. Then I'd say it wuz about three chaws and a half."—*St. Paul Dispatch*.

FOR those who do not have it in mind, it may be well to mention the five American Republics which have adopted the federal union of states as its form of government: the United States of America, the United Mexican States, the United States of Brazil, the Argentine Republic and the United States of Venezuela.

1827



W.G. STRINGER, 1898.



FRANK KRUG, 1894.



J. J. TUG



W.T. PRENTZEL, 1904.



J.M. WILLITTS, 1904.

W.A. HOUSTEN, 1899.
BALTIMORE.

WM. COANE, MA.



R.R. BELLVILLE, 1905.



HERMAN PRICE, 1901.

PHILAD
SALES
JOSEPH
CRUCIBLE

D X



KER, 1905.



A. R. LLOYD, 1898.



O. K. STUART, 1899.



NAGER, 1880.



L. C. WITKOWSKI, 1894.
WASHINGTON.



A. J. PFAFF, 1904.



H. H. KEIM, 1908.



J. J. LECKIE, 1903.



G. B. LLEWELLYN, 1908.

ELPHIA
FORCE
DIXON
COMPANY



THE JOSEPH DIXON CRUCIBLE COMPANY'S SALES FORCE FROM THE PHILADELPHIA DISTRICT

Success was never obtained without hard work, perseverance and ability. The best example of this is the showing of the Philadelphia District under the management of Wm. J. Coane, assisted by his able force of fifteen salesmen. Mr. Coane has just celebrated his twenty-sixth year of service with the Joseph Dixon Crucible Company.

The Philadelphia District comprises Pennsylvania, the southern half of New Jersey, Delaware, Maryland, District of Columbia, Virginia and West Virginia.

Mr. Coane's long, active experience has developed both man and business, for it is quite a pride with him to recall the day when he was appointed manager, his predecessor's stating that they were doing a business of about \$60,000 and in a joking way said that some day he hoped this district would be able to reach the \$100,000 mark. This was an incentive to Mr. Coane and in reaching for it went beyond the wildest expectation of this ambitious young man.

When Mr. Coane joined the Dixon forces as a boy, the branch was located at No. 6 North 5th Street, where a staff of four were employed. Five years later, after a removal to No. 40 North 4th Street, Mr. Coane was given the management of the Philadelphia District. At the end of another five years, the rapidly growing business in the Dixon Company's graphite products necessitated a change, the branch being moved to 38 North 4th Street. History repeated itself and five years later larger quarters again were secured at the present central location, 1020 Arch Street. Here the business has constantly developed and a large staff is busily engaged in marketing the widely known Dixon Graphite Products.

With steady gain every year and still not satisfied with the high water mark reached in 1910, which was by far their banner year, they propose to make 1911 still another record breaker.

Mr. Coane unhesitatingly tells you that the foundation stones for his success are team-work, efficient service to customers and loyalty, with the absolute assurance of the fine quality of the goods each salesman is selling.

He thoroughly believes in the modern methods of specializing and has subdivided the business into five departments: pencil, school, crucible, paint, grease and graphite, each of these products going to a different market and by different methods.

To further concentrate it was decided last July that the transferring of the accounting and bookkeeping departments be made to the main office in Jersey City, everything else in the Philadelphia office remaining the same as in the past. This was done to relieve the Philadelphia office of detail work for the expansion of the sales' end. This will give Mr. Coane and his selling force of live wires greater freedom and a chance to build stronger on each separate line.

Mr. Coane long ago contracted the fever of modern merchandizing and keenly appreciates the value of publicity, which is the structural form on which he is building one of the largest branches of this business. And with service as his keystone here he is forging ahead, gaining and keeping the confidence of his customers.

He coincides thoroughly with Andrew Carnegie that the success of any business is in having the right sort of men around

him. Mr. Coane's policy has always been to carefully select young men and educate them for higher positions.

Frequently the Philadelphia force of salesmen meet for dinner and there discuss the various phases of the pencil business or lines they are particularly interested in. These meetings have a tendency of keeping the men enthused and well posted.

Mr. Coane is known to the stationery trade as the "Father of the Philadelphia Stationers' Association," because of his efforts in organizing that flourishing organization. He has served as second vice president of the association and chairman of a number of committees. (See illustration on pages 2338 and 2339.)

THE following was copied from a Bangor, Me., paper and refers to the recent disastrous fire in that city; it would seem to carry with it a very valuable argument in favor of the use of the lead pencil where permanency on memorandums may not only be desirable but of special value:

"A wealth of peculiar incidents were recalled after the big fire and here is one of the most peculiar of them all. When S. D. Benson, of the Sterns Lumber Company, examined the books taken from the vault of the Sterns Building in Exchange Street, he found that records written in ink thirty years ago were entirely illegible, while certain memoranda made in pencil at the same time could be plainly read. The pencil marks had withstood the heat, and the ink had not.

The Baby's Cry

for better nourishment is a call to the mother for better food. The engine's groan for better lubrication is a call to the engineer for

Dixon's Flake Graphite

No other lubricant can perform the service of flake graphite. It builds the rough metal surfaces with a smooth, durable, veneer-like coating of graphite and prevents the ruinous metal-to-metal contact. Write for booklet and free sample No. 190-c.

JOSEPH DIXON CRUCIBLE CO.
JERSEY CITY, N. J.



THE AMERICAN WOOLEN BUILDING

Through the courtesy of the *Architects' and Builders' Magazine*, we are using the above illustration of the nineteen story building of the American Woolen Company, a view of which, when partially erected, was published, as some of our readers interested may remember, in the June 1910 issue of *GRAPHITE*.

This building possesses features distinctly unique in several respects. Perhaps the most interesting and unusual is its freight entrance on 19th Street, extending to the main part of the building located on the northeast corner of 18th Street and Fourth Avenue. This freight entrance with a street frontage of forty feet is sufficiently large to allow all trucks and delivery wagons to drive right in from the street and unload upon interior platforms, near which is located a battery

of freight elevators. The whole arrangement insures prompt and efficient freight service to both the American Woolen Company, who occupy the floors from the thirteenth to the nineteenth; and to their tenants, who occupy the remainder of the building.

The American Woolen Company have very effectively and strikingly used their trade mark, a ram's horn, in an artistic design in the hallway of the main entrance and as part of attractive terra cotta drinking fountains located on each of the floors occupied by the company.

As mentioned in our previous item concerning the erection of this building, Dixon's Silica-Graphite Paint is used on the structural steel.

DIXON'S SILICA-GRAPHITE PAINT

Highly Recommended for Worn Roof Slates

The value of Dixon's Silica-Graphite Paint for renewing and preserving worn roof slates has undoubtedly been unknown to the readers of *GRAPHITE*, as it has to us, although we have known for many years that Dixon's Silica-Graphite Paint has been most successfully used for water-proofing and adorning brick walls, especially those exposed to the driving east storms so common in the neighborhood of New York.

We now note from a letter received from a firm in Pennsylvania who have been experimenting with Dixon's Silica-Graphite Paint for the last nine years as a protection to old slates that had become so soft that the water soaked through in a hard rain, that Dixon's Silica-Graphite Paint makes such slates impervious to water.

We also learn that old slate roofs that have not only become soft but faded out to a dirty white and delapidated looking color can, by a treatment of Dixon's Natural Color Silica-Graphite Paint, be made to look like new roofs that cannot be told from a No. 1 Bangor or Peack Bolter's Slate, except by people who are experts in slate roofs.

Our Pennsylvania friends add the following to the above statement:

"We have waited for nine years to see the results and we now know that we are justified in saying that Dixon's Silica-Graphite Paint is almost invaluable as a restorer of old, soft and faded slate. It restores them to their original appearance and usefulness, and if it becomes known to the public as we know it, it will mean a great demand for Dixon's Paint, especially where there has been a great deal of low grade slating done.

"We wish you to take particular notice that when we say 'Graphite' we mean Dixon's only, for in the past ten years we have seen and tried nearly all graphite paints and find that many are worthless and none can compare with Dixon's by one-half."

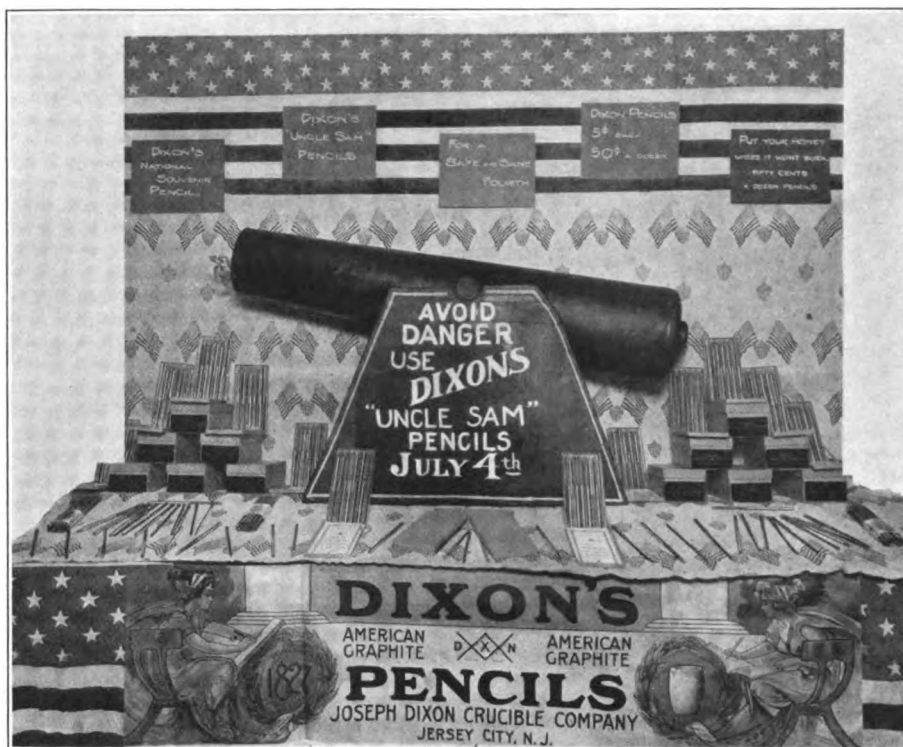
WAS IT WRITTEN WITH A DIXON PENCIL?

"Your name," he stammered, "is—is written on my heart."

"Yes?" she whispered. "But—but wouldn't it be much nicer if your name were engraved on my stationery?"

—*Inland Stationer.*

DIXON'S graphite publications sent free upon request.



UNCLE SAM WINDOW DISPLAY

From Our Boston Correspondent

What will be recognized as a rather unique idea in window dressing is shown in the accompanying illustration of a display in the windows of several local stationers last July. The scheme was originated and carried out by the Boston office of the Joseph Dixon Crucible Co., of which H. A. Neally is manager, and among those who made use of it were Adams, Cushing & Foster, Hooper, Lewis & Co., J. L. Fairbanks & Co., and Hill, Smith & Co. It will thus be seen that these several houses co-operated with the manufacturer in a large way for the celebration of a "safe and sane" Fourth, upon which idea the exhibits were based, and carried it out in a smart, silent and non-sanguinary manner.

Paradoxical as it may seem, it was a noiseless window, though Dixon's pencil and other products have been making considerable noise in the world for lo! these many years. What it may have lacked in noise, however, was fully offset by the appropriateness of the idea to the day and in the use of an abundance of patriotic colors and symbolic designs. There was, for instance, the Star Spangled Banner, running away across the top of the window, and below it were miniature flags and shields—making in background and carpet a fitting setting for an exhibit on the great American holiday. Then there was "Uncle Sam," whose presence in semblance and spirit was further typified in an army of "Uncle Sam" lead pencils, dressed and boxed in the National colors.

And last but not least, observe the cannon, which with an electric blower attached, contributed to the realistic effect of the scene by firing off harmless balls of brightly colored tissue paper, and which thus played its part as the *piece de resistance* in attracting the attention of all patriots and lovers of good pencils to the goods themselves, to the placards, which humorously mixed patriotism with commercialism and pencils with pelf, and to the other features of the display. Among the reports heard as to the effectiveness of the window were

those made by this gun, and they go to indicate that what with its long range and muzzle velocity and what with the accurate sightings of the invisible man behind the gun every one of those paper pellets reached its mark and at one and the same time made a palpable and dual hit in the popular mind for Dixon's Uncle Sam Lead Pencils and the day we celebrate.—*Walden's Stationer and Printer.*

KIPLING'S NEW POEM

If you can keep your head when all about you
Are losing theirs and blaming it on you;
If you can trust yourself when all men doubt you,
But make allowances for their doubting, too;
If you can wait and not be tired by waiting,
Or being lied about don't deal in lies,
Or being hated don't give way to hating,
And yet don't look too good, nor talk too wise;

If you can dream—and not make dreams your master;
If you can think—and not make thoughts your aim;
If you can meet with triumph and disaster
And treat those two imposters just the same;
If you can bear to hear the truth you've spoken
Twisted by knaves to make a trap for fools,
Or watch the things you gave your life to broken,
And stoop and build 'em up with worn-out tools;

If you can talk with crowds and keep your virtue,
Or walk with kings—nor lose the common touch;
If neither foes nor loving friends can hurt you,
If all men count with you, but none too much;
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the earth and everything that's in it,
And—which is more—you'll be a man, my son!

—RUDYARD KIPLING in *American Magazine.*

RANDOM SELECTIONS

From Various Trade Papers Relative to the Uses of Graphite

The *Paper Trade Journal* recommends graphite for cooling hot boxes and has the following to say on the subject:

When a hot bearing is discovered the cap may be slacked back somewhat so as to allow a free circulation of the lubricant. As soon as the bearing is cool, a copious and constant supply of oil, which may have some graphite mixed with it, should be provided and the results noted. If the bearing refuses to keep cool after this, it generally shows that the rubbing surfaces are in such a bad condition as to need refitting.

The mineral substance known technically as graphite and in shop parlance as black lead, or plumbago, forms an excellent lubricant, which when ground fine may be used either dry or may be mixed with some fluid lubricant or grease to a consistency considered suitable for the work. Graphite is one of the most refractory substances known; this fact makes it an invaluable lubricant for bearings subjected to high temperatures. Its lubricating qualities at all temperatures are so high that it forms a very valuable addition to almost any oil.

The *Thresherman's Review* says the best known help for a hot box is a mixture of one part of graphite to ten parts of cylinder oil.

The *Mining and Scientific Press* recommends anointing screws with a mixture of graphite and soft tallow to prevent them from becoming fast. They will then remain unrusted and unaltered for years. A screw rusted in may be removed by placing the flat extremity of a red-hot rod of iron on it for two or three minutes. After the screw has heated and cooled it will turn easily.

The *American Marine Engineer*, speaking of overhauling marine boilers, states that graphite is a good protective against corrosion for both inside and outside surfaces of boilers. It is usually mixed with oil and applied with a brush as though it were paint. It will fill in all uneven places and the rougher the surfaces are the better will the graphite cling and the longer will it stay on. Boilers that are occasionally treated with graphite wash will resist corrosion for a long time.

An engineer writing to *Power* says, "From personal experience and application I know that graphite will prevent scale from sticking to the shell so hard. This property of graphite in itself is a great help to engineers in keeping their boilers clean. In a power plant of six Babcock & Wilcox boilers, four were run twenty-four hours daily while the other two were out being cleaned. After being thoroughly cleaned, ten pounds of graphite were equally divided between the two drums of each boiler, the boilers were sealed, and put into service and two others cut out. When drained out and opened up, considerable scale was found in the mud drum and when the cleaner was run through the tubes every vestige was removed. On examining the scale the graphite could be seen clinging to the under side, showing that it prevented the scale from sticking."

A NEW REMEDY

The writer has recently returned from a brief sojourn in South Jersey where he enjoyed three good meals each day of the farm products for which that section is justly famous, and where he furnished a continuous lunch for the ever hungry mosquitoes for which the state is renowned the world over.

Of the never-ending pleasures to be derived from the luscious Jersey melons, fruits and garden products, a hungry bard could sing stanzas by the yard, but that is not our present theme. We wish rather to confine our attention to the members of the family *Culex Mosquito*.

The whole State of New Jersey has a well deserved reputation for being the region in which the mosquito has reached the highest degree of development. The mosquitoes of South Jersey, however, take all prizes in the way of persistency and general all around powers to harass. One cannot remain outdoors two minutes, especially in the morning or evening, without being drilled full of holes, all the usual preventives notwithstanding the carefully planned and deliberately executed attack of the enemy. At least, we heard of no effective remedy until necessity suggested the following simple but efficacious treatment.

Procure a package of Dixon's Finely Pulverized Flake Graphite (no household is complete without it) and holding a mosquito by its hind legs, polish its proboscis with graphite. The mosquito may then be safely released as it can do no further harm. The explanation is that since the irregularities of its bill are so smoothed over that it is impossible for the mosquito to make the usual jagged and irritating perforations, it may peck at one without attracting attention. When the mosquito finds itself deprived of its power of annoying, it soon lies down and dies of a broken heart.

An alternate method and one much in favor is to thoroughly rub fine flake graphite on all exposed parts of one's body, after which one may defy all pestiferous insects. A mosquito, for instance, flying at one in the usual gyratory manner so as to bore as deep and ragged an opening as possible, is surprised to find that its proboscis is neatly deflected by the slippery graphitic coating. After several vain attempts to make a hypodermic puncture into one's anatomy, it falls exhausted and may be dealt with according to one's pleasure.

Both of the above means of outwitting mosquitoes should rapidly become popular, as they possess obvious advantages over the preventives in common use. Lose no time in obtaining a supply of Dixon's Pure Flake Graphite from your dealer and you will be surprised to learn in how many ways it will be of use to you.

A SYSTEM THAT COMMANDS ADMIRATION

One contractor, on being handed plans for the work on a section of the new subway of New York, allotted to his firm, started for his farm in New Jersey, accompanied by his chief engineer, to study the details. Before leaving he said calmly: "We are ready to begin work at once. We have kept our organization from the Pennsylvania tunnels intact for this. All our preparations were made long ago in anticipation of today. Between 4,000 and 6,000 men and 1,000 teams will work on this job, starting at six in the morning and quitting at midnight."

Many cities may find a good lesson in the above. If a private firm can look ahead and hold a force in readiness for a piece of work they know is coming, why cannot a big city do the same when they know that within a short time the streets will be filled with snow and the charity lodging houses full of homeless men and the authorities declaring they cannot clean the streets because they are unable to get men.

WITH the policy of "selling satisfaction" and with no other can the manufacturer hope to "merit continued patronage." The manufacturer who makes the best is "selling satisfaction." His customers are those who know when quality is economy. His products are the standard by which all others are judged, and his trade mark is no small part of his business assets.

We believe it would be difficult to find another concern which for over eighty years has so persistently adhered to this policy of "selling satisfaction." Certainly no other concern to-day is more careful in the production and of the efficiency of its products than the Joseph Dixon Crucible Company. ❖❖❖ ❖❖❖ ❖❖❖

GRAPHITE

VOL. XIII.

OCTOBER, 1911.

No. 10.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

PURITY OF GRAPHITE

We have been asked time and again to tell the carbon percentage of Dixon's various grades of graphite, or to give their analysis. We have always tried to answer these inquiries in the clearest way possible, and now we wish to again give our reasons why it is difficult to make a satisfactory reply to a question of this kind.

1.—To the average person an analysis would mean practically nothing at all.

2.—We have never seen a specification for graphite based solely on the percentage of the various ingredients that would not admit of very inferior grades of graphite passing the requirements. Every specification we have seen might easily be juggled and yet the material offered would meet the specification.

3.—The only way to get just what is wanted is to order it by name and on succeeding orders to specify the manufacturer's name or trade-mark and mention the grade desired.

4.—If the chemical analysis of the material wanted is stated without mentioning the trade name, one would be surprised at the variety of graphites differing from one another in appearance, quality and adaptation which will meet the conditions imposed.

The question is often asked, "What is the difference between graphite and carbon?" and the only answer seems to be, "Graphite is soft and unctuous, while carbon is hard and has no unctuous feel."

All graphites have this unctuous quality, because that is a characteristic distinguishing feature of graphite from carbon. There is no other test than this for the ordinary consumer to determine between the two, but even this test is not always conclusive, for it is possible to get this unctuousness to a certain extent by mixing small quantities of graphite with material having a carbon base. It is quite important, therefore, to know the proportion of both graphitic and amorphous carbon present in a sample. While there are tests which show the difference between graphitic and amorphous carbon, they are not available to the ordinary works' chemist and he doesn't determine these two separately in working on an analysis, as a rule he searches for carbon only.

We have frequently examined various grades of graphite and tested them for lubricating properties. We have found

that one, say *A*, would run high in carbon, while another, say *B*, would run considerably lower. *A* would feel somewhat hard to the touch without any marked unctuous quality, while *B* would feel soft and very slippery and on the test machine would show a much greater ability to reduce friction. If, however, technically speaking, they were judged by the carbon content alone, *B* would be inferior to *A* in purity.

Generally speaking, it is far more satisfactory for the Dixon Company to sell graphite which we know will do the work than to attempt to meet any specification with the probability of the material giving poor results. It is also better for consumers to order by trade names than by formulas, for they will then know exactly what they will get, and will be sure of receiving material of uniform quality at all times. In most cases it is more or less irrelevant whether the graphite contains so much of this or so much of that or not, so long as it produces the desired results.

In the matter of Dixon's Flake Graphite the foreign substance, that which might be called an impurity, is of a micaceous nature, and mica is known to be a very fair lubricant. Another graphite might have a far less percentage of impurity and yet that impurity might be of a quartz nature or some hard abrasive material sure to damage any bearing on which it might be used.

GRAPHITE FINGERPRINTS

Graphite has some strange and unusual uses. Perhaps the most unusual and least known is that of obtaining fingerprints of criminal suspects.

This interesting application of graphite may be easily demonstrated by pressing the finger upon a clean, white sheet of paper and then sprinkling a small quantity of Dixon's No. 635 over the surface used. The result, after allowing the surplus amount of graphite to fall away (dusting disturbs the formation of the lines), is a clear, silvery skeleton picture. To obtain the most satisfactory result, the experiment should be tried just before washing the hands, as water destroys the glutinous substance which oozes from the pores of the skin and is necessary to form the invisible lines to which the graphite clings.

CONNECTIONS and joints of all kinds should be made with a compound that makes them tight and which allows them being taken apart without injury. One of the reasons why sections are used is, so a broken part can be replaced. Dixon's Graphite Pipe Joint Compound makes a tight joint and one easily taken apart without injury to adjacent parts.



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

President—GEORGE T. SMITH
Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
Ass't Treas. & Ass't Sec'y—J. H. SCHERMERHORN

DIRECTORS:

GEORGE T. SMITH	WILLIAM H. CORBIN
GEORGE E. LONG	EDWARD L. YOUNG
WILLIAM MURRAY	HARRY DAILEY
WILLIAM G. BUMSTED	

OFFICES AND SALESROOMS:

NEW YORK SALESROOM, 68 Reade Street.
PHILADELPHIA SALESROOM, 1020 Arch Street.
SAN FRANCISCO SALESROOM, 145 Second Street.
CHICAGO OFFICE, 1324 Monadnock Block.
BOSTON OFFICE, 648 John Hancock Building.
PITTSBURG OFFICE, Wabash Terminal Building.
ST. LOUIS OFFICE, 501 Victoria Building.
WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
BALTIMORE OFFICE, 1005 Union Trust Building.
BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

"POISONOUS" GRAPHITE

The following interesting article is sent us by *The Washington Herald* of August 17th by our Washington, D. C., representative:

"In the presence of the officials and most of the employes of the government printing office, vice president Sherman yesterday presented to Arthur J. Williams, assistant foreman of the foundry section, the medal given by the public printer for Mr. Williams' hygienic invention that greatly reduces the danger from graphite dust.

"The public printer, Samuel B. Donnelly, explained the invention.

"Graphite dust in the past always has been inhaled by the

workman, and as it is very poisonous it has shortened the lives of the graphite workers."

The above reminds us that some years ago a Jersey City doctor advised one of our shipping clerks to leave us because his symptoms indicated "lead poisoning due to the blacklead in the Dixon factory." Before accepting the young man's resignation, we advised him to ask his doctor to look up the meaning of the word "blacklead," and for himself to ask the druggist. He asked the druggist and was informed that "blacklead" was a misnomer for graphite and that graphite was a form of carbon, the same as charcoal, and was just as pure and healthful. The druggist further said that all that ailed the young man was a bad liver and he prescribed accordingly and the young man was himself again. The remarks we all made about that doctor need not be printed.

As a matter of fact, there are men and women now in the employ of the Dixon Company who have daily breathed and been coated with graphite dust for forty to fifty years, and barring age, are in robust health.

So far as we know, the Dixon Company have more long service and healthy employes than any other company in the United States.

Therefore the paragraph that we print above seems utterly ridiculous and is probably founded on something other than graphite dust.

UNIVERSAL JOINT LUBRICATION

Universal joints may be spoken of as the elbows of the shafts, by means of which they may be made to turn at an angle and yet revolve about their own centres throughout their entire length. These joints have close fitting, grinding parts which are sometimes hard to lubricate properly.

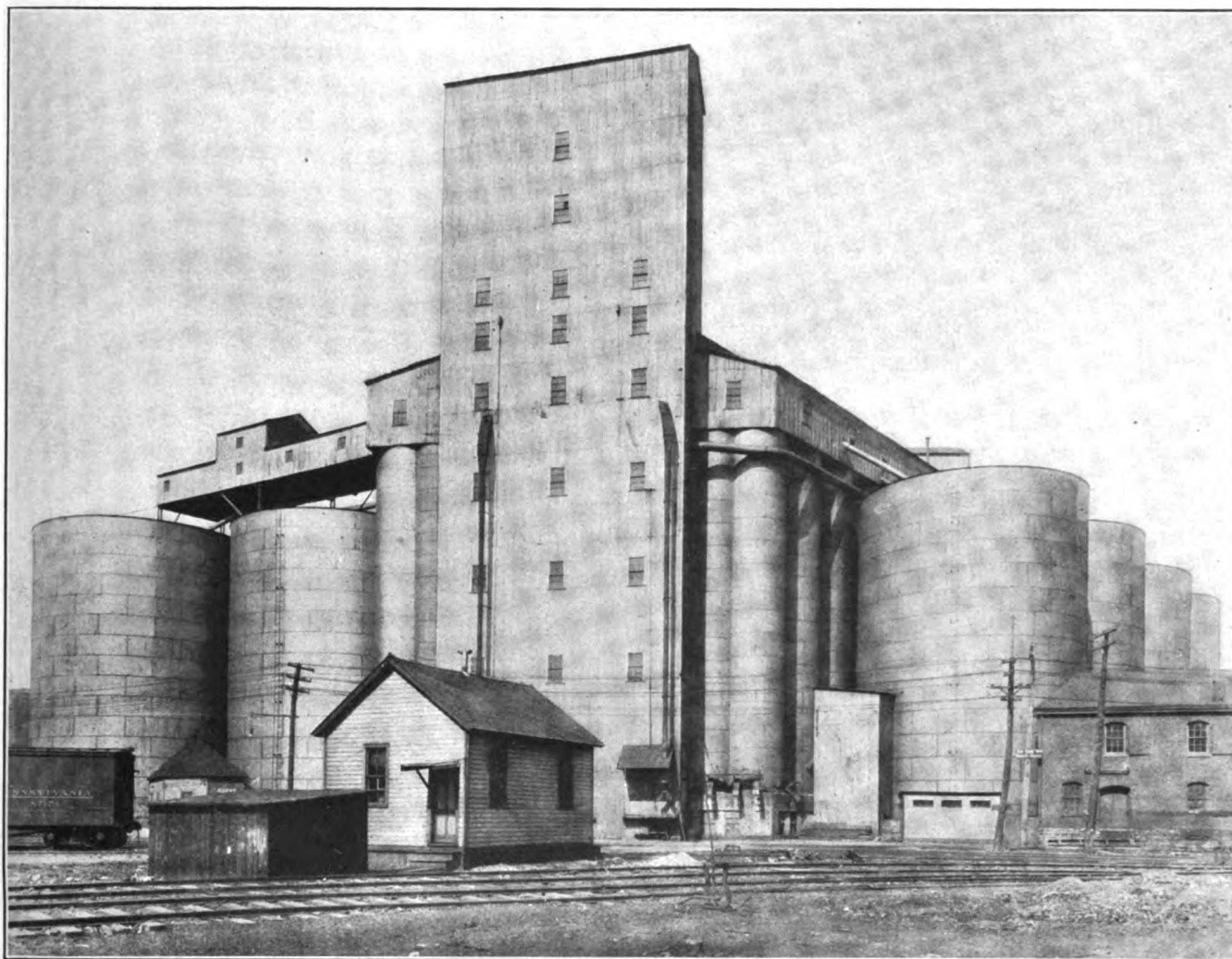
Some universal joints are provided with compression grease cups, which tend to keep the oil or grease pushed down between the working parts. However, if some provision is not made the rapidly revolving shaft throws off and wastes much of this grease. In some cars the universal joint is incased in a tight leather boot which may be entirely filled with grease so as to act as a grease cup and a retainer at the same time.

In cases where no boot is furnished, the joint should be oiled very often with a good quality of grease or an oil of high viscosity to prevent the rapid wear of these parts, which will surely take place if they are allowed to run dry, even for only a short time.

The above appears in the August 23rd, 1911, issue of *The Horseless Age*, and in this connection we want to call attention to the Dixon Graphite Grease No. 676 for universal joints. This grease is now used and recommended by a number of automobile manufacturers who have selected it as most satisfactory after careful tests. The grease is not affected through a very wide range of temperature, and like all the Dixon lubricants contains the celebrated Ticonderoga Flake Graphite.

A man who was deeply in debt,
Said "Things are as bad as they'll gebt,
So I'll worry no more—
Let the rest walk the flore;
I'll pay when I can, but not yeht."

—Baltimore American.



GREAT EASTERN ELEVATOR, BUFFALO, N. Y.

Here is another example of the durability of Dixon's Silica-Graphite Paint. The illustration is of the Great Eastern Elevator of Buffalo, N. Y., owned by the American Linseed Co. In 1906 this structure was painted with Dixon's Silica-Graphite Paint, natural color, and a recent examination shows it to be in excellent condition.

GRAPHITE AND GRAVITY

A well-known professor of one of our great universities delights in telling of his experience with an inventor of the unlettered genius type who came to the professor with a model of a perpetual motion machine.

"H'm, looks plausible," observed the professor, "but it won't work. What are you going to do about gravity?"

"Gravity!" said the visitor scornfully, "T'ell wit' gravity; we'll use plenty o' Dixon's Graphite."

"THE legislators who oppose laws compelling the pasteurization of milk," said Nathan Strauss, "bring forward arguments about as weak as that of the Maine milkman.

"A lady summering in Maine said to her milkman severely: "See here, this milk of yours is half water and half chalk. What do you mean by advertising it as pure?"

"Madam," said the milk manufacturer with withering dignity, 'to the pure all things are pure.'"—*Everybody's*.

HOW LEAD PENCILS ARE MADE

According to the Feminine Idea

You take a lot of graphite which is also called black lead, and which is used for stove polish and axle grease and other things, and you mix it with a lot of clay and then you put it in barrels and pour a lot of water on it and stir it up. Then you take it out and put it in bags and squeeze all the water out, and then you put it in a big iron press and squeeze out miles and miles of what looks like black strings.

Girls take these strings and cut them into pencil lengths. Then these are put in what they call crucibles and placed in a furnace that is hotter than what the ministers preach about. That is the way the pencil leads are made.

The wooden covers are made of cedar. You take a cedar tree and saw it up in little pieces and these pieces run through a machine that digs a groove in them. Then the leads are put in these grooves and glue is spread over them and another piece of cedar is put on top so that both are stuck together.

Then the pieces that are stuck together are put in a machine that cuts them up into lead pencils.

Then the pencils are painted and the names printed on them and put up in boxes. I forgot to say that what makes some pencils hard and some pencils soft is that the soft ones have more graphite in them than the hard ones.

DIXON'S graphite publications sent free upon request.

STATUE OF LIBERTY, NEW YORK

This world-famous and inspiringly noble statue is corroding. It was executed by the great sculptor Frederic Bartholdi for presentation by the French Government to the American people in commemoration of the centenary of our independence. The statue, costing \$300,000, which was erected with 300 sheets of metal on Bedloe's Island in New York Harbor in 1886, is 200 feet high above its pedestal and is by far the largest statue in the world. Bartholdi was also the sculptor of the beautiful statue of General Lafayette in Union Square, New York.

We cannot do better in describing the regrettable corrosion of the metal garments of Miss Liberty, than quote the *New York Times* of July 24th, 1911. "Time has dug holes in Liberty Statue. Already the metal is eaten through in some places and an examination from the interior of the statue, shows about fifty or seventy-five small holes in the gown of the goddess. These openings vary in size from pin points to openings as large as a quarter of a dollar. All show ragged edges where the work of corrosion is still going on. Where water has entered the holes and run down the interior of the statue, its course is marked by discoloration and tends to corrosion."

All exposed and even interior metal work should be preserved from corrosion with both a shop and a field coat, by a good protective paint of tried quality, and, if economy in the end is desired, by a protector that gives long service, even if it costs a little more to purchase.

Dixon's Silica-Graphite Paint has been on the market for nearly fifty years. It has protected the steel work of well-known structures erected throughout the United States as well as foreign countries from corrosive agencies, without repainting in some cases for seven years and even for a longer period of time. It is made in four colors, ONE QUALITY only, with pure, double boiled linseed oil as the vehicle, and its graphite and silica components are perfect for protection and long service.

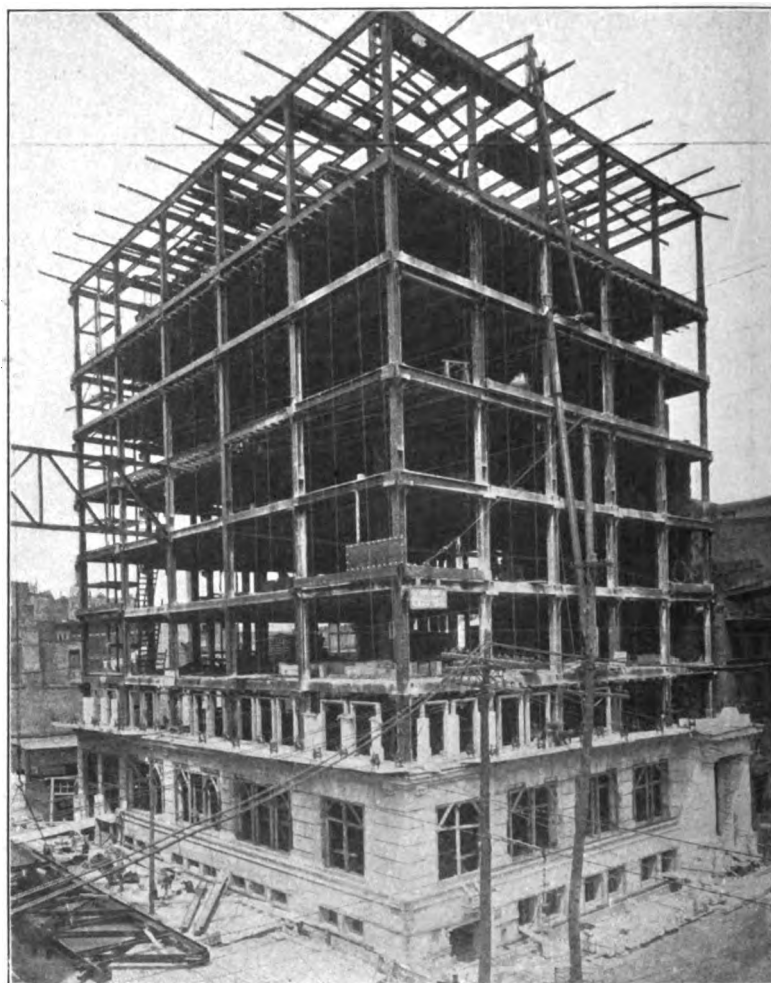
Our Paint Department will be glad to hear from those who have metal surfaces to protect such as steel cars, structural iron, roofs, smokestacks, grain elevators, signal apparatus, pipes, fences, bridges, boiler fronts, condensers, standpipes, trolley poles and trucks, transmission towers, etc.

—L. M. STOCKING

COLGATE OFFICE BUILDING

Manufacturing success is largely in proportion to the genuine excellence of the manufactured product and in witness thereof, we venture to presume that no two manufacturers' names are better known to the general public than those of Colgate and Dixon. And as for the products, a casual mention of either name will bring to mind one or more of over a hundred.

Curiously enough, the subject about which we write relates both to the success of the Colgate Co., and to one of the



COLGATE BUILDING—IN COURSE OF CONSTRUCTION

many famous products of the Dixon Co., Dixon's Silica-Graphite Paint.

The recent addition to the extensive plant of Colgate & Co. in the form of an imposing office building, designed by Charles Q. Rich, Architect, and located on the corner of York and Hudson Streets, Jersey City, contains the executive departments and is one of the large group of buildings constituting their plant in this city.

This new Colgate Building presented in itself structural difficulties of considerable interest, and the executive charge of the work and the general supervision of the construction of the building was conducted from the office of William Pierson Field, Consulting Engineer.

As is generally known, the lower section of Jersey City is built upon filled-in land and the Colgate Building, as well as all other structures of any considerable size, are erected upon pile foundations. Over seven hundred spruce piles were driven for the Colgate Building by the Thompson-Starrett Co., who were the general contractors.

The one feature of the architectural construction which, no doubt, attracted general interest, was the design and erection of the bridge which joins the new with the old building. The distance between these buildings is about sixty feet, and the bridge crosses the street at the fifth story level of the old building. In a well written and interesting article, the editor of *Architecture and Building* briefly sums up this feature as follows: "This whole construction, while simple in



COLGATE BUILDING—COMPLETED

appearance, involved extensive calculations, and presents an interesting solution of the problem of proper connections between an existing rigid concrete building and a new, riveted steel structure. The methods employed are unique in the writer's experience."

We are indebted to the publishers of *Architecture and Building* for the two illustrations which appear here in connection with this article. These illustrations show the "before and after" stages of outside construction. The immense amount of structural steel shown in one of these pictures is the work of the Snare & Triest Co., Steel Contractors, and as previously intimated is protected with Dixon's Silica-Graphite Paint, the Vassilaros Contracting Company applying coats of both Dixon's Olive Green and Dark Red.

BERKS COUNTY TRUST COMPANY BUILDING ERRATUM

In the September issue of *GRAPHITE*, we printed a reproduction of the Berks County Trust Company Building, but, unfortunately, in our write-up we misspelled the name of the architect. Correctly spelled, the architect who designed this beautiful structure is Mr. A. A. Ritcher of Lebanon, Pa.

DIXON'S graphite publications sent free upon request.

A LONG WAIT FOR RECOGNITION

Reversing the usual order of things, scientists are determined that the rest of the world shall recognize in its life-time the inestimable boon that Dr. Charles J. Finlay of Havana conferred upon mankind when he formed the correct idea of how yellow fever is transmitted, proved his theory by self-inoculation and forced it upon enlightened physicians and sanitarians after it had been rejected by contemporaries who regarded him as a nuisance.

It is now a little over thirty years since Dr. Finlay read a paper before the Royal Academy of Havana, in which he propounded the novel theory that yellow fever was propagated through the agency of mosquitos.

Since the discovery by Dr. Finlay, we have been singing the praises of the men upon whom the doctor forced his ideas. Others have been given credit, and too much credit cannot be given to those who showed their bravery and subjected themselves also to inoculation, but Finlay did the self-same inoculation twenty years earlier. What Dr. Finlay did and what others have done since him reads like a romance.

If we were not criticized for taking as a text a subject like the above, we would like to bring to the attention of the readers of *GRAPHITE* that the Dixon Company is a pioneer absolutely in the matter of graphite lubrication, and like Dr. Finlay, the Dixon Company is now, after over thirty years' hard work, just beginning to reap the real credit as well as benefit of what it has done along the line of graphite lubrication.

Today we read in the mechanical papers of the highest standing, whole columns of what graphite has done in the way of economic and thorough lubrication.

In its effort to demonstrate "Graphite as a Lubricant," the Dixon Company has spent thousands of dollars in advertising. It has employed scientists of world-wide reputation to make exhaustive tests with the famous Dixon Ticonderoga Flake Graphite, with the result that today it is acknowledged by all authorities that Dixon's Flake Graphite is without exception the best solid lubricant known, and that the function of these thin flakes of Ticonderoga graphite is to fill up the microscopical irregularities of bearing surfaces, coating them with a thin veneer of graphite of marvelous smoothness and endurance.

THE CORK AND THE WHALE

A little cork fell in the path of a whale
Who lashed it down with his angry tail.
But in spite of his blows
It quickly arose
And floated serenely before his nose.

Said the cork, "You may flap and splutter and rap,
But you can never keep me down.
For I'm made of the stuff
That is buoyant enough
To float instead of to drown."

—From *Printers' Ink*.

1827



D X N



H.A. NEALLEY, MANAGER-1901



J.A. MOTT-1907

BOSTON
SALES FORCE
JOSEPH DIXON
CRUCIBLE COMPANY.



H.B. VAN DORN, JR.-1908



A.K. INGRAHAM-1870



C.A. SHAW-1905

THE JOSEPH DIXON CRUCIBLE COMPANY'S SALE FORCE FROM THE NEW ENGLAND DISTRICT

In March, 1904, Mr. H. A. Nealley of the Jersey City office of the Joseph Dixon Crucible Company, was appointed manager of the new paint office of the company in the Paddock Building, 101 Tremont Street, Boston, Mass. Mr. Nealley became connected with Dixon's home office in 1901, being assigned special work with the architects and engineers in New York City, and general railroad work in New York and New England. He is a native of Bath, Maine, and previous to being a Dixonite served in a reportorial capacity on the Bath newspapers with later advancement to associate editorship and representative of the Associated Press.

Mr. Nealley's duties with the Dixon Company have included representing the company at some of the large railroad conventions. When the Railway Bridge and Building Supply Men's Association was organized at the annual convention in Chicago, he was elected a member of the Executive Committee, a position he continues to hold. For the past two years he has been a member of the Entertainment Committee of the Railway Supply Manufacturers' Association. This committee plays an important part in connection with the enormous conventions of the M. C. B. & M. M. Associations which hold a conspicuous place in the railway world.

The seven years' history of Dixon's Boston office shows clearly the strength and progress which characterizes competent management based upon principles which come from sound and practical business judgment. While, at first, attention was given especially to paint matters, within a short time inquiries and orders for other Dixon products began to come in and constantly increased. In building a substantial foundation for Dixon's New England headquarters, which includes besides the New England States that section of Canada east of Montreal, well arranged systems have been established.

In September, 1908, it was found advisable to move the Boston office to larger quarters in the John Hancock Building, which had just been completed and is considered one of the finest office buildings in America. Additional floor space was taken in this building in February, 1910, and today Dixon's Boston offices are most complete for handling promptly and carefully every detail of increasing trade.

Among those on the staff of the Boston office is Mr. A. K. Ingraham, Dixon's oldest salesman, both in age and length of service. Mr. Ingraham is hale and hearty in his seventy-fifth year and occupies a unique position in being one of the oldest salesman in the country. The interesting anecdotes that Mr. Ingraham can relate of stage coach days and wayside inns cause the present generation of salesmen to appreciate the many conveniences now offered for conducting a successful campaign.

In Mr. A. L. Haasis, who has charge of the Crucible Department, the Boston office recognizes a man of unusual ability. There are few if any men identified with the great sales forces more familiar with or efficient in their respective lines than he. His pleasing personality and versatility have won for him an enviable reputation.

In selecting a man to head the School Department in New England, good judgment was shown in securing for this position Mr. H. B. Van Dorn, Jr., who has made many friends in commercial as well as educational lines.

Mr. C. A. Shaw and Mr. J. A. Mott came to the company especially well fitted for looking after Dixon's increasing field in lubrication and they are giving particular attention to this important branch of the service.

AUTO TOURISTS

Those who make tours of any length by auto should, without fail, take with them a can of Dixon's Motor Graphite. If no trouble comes other than an annoying squeak somewhere, it will pay to have the graphite to apply.

If, when tires are put on, a little of the graphite is rubbed on the rim there will be no sticking of the shoe and no rusting of the rim.

Any and all of the iron or steel work—engines, pipes, mufflers, etc., may be made rust proof by means of Dixon's Motor Graphite.

A teaspoonful to the pint of oil in the crank case will prevent sticking of pistons and will increase power and make engines run smoother.

Dixon's Motor Graphite mixed with kerosene, or any light oil, or even with regular oil, and flowed between the leaves of the springs will prevent rust and squeak and wear.

Dixon's Motor Graphite should be mixed with the grease used to pack the universal joints and similar parts.

Dixon's Motor Graphite has been termed by experienced chauffeurs and autoists as "the indispensable."

LUBRICATION AND DEPRECIATION

If you examine a second-hand machine tool with the purpose of buying, what is the first point that you look over? Probably, the bearings. Why? Because they show more quickly and surely than any other vital place the care or abuse that the tool has received.

This is a money-making reason for better lubrication of machinery.—*American Machinist*.

What a lesson there is in the above to the man that uses machinery! What an argument for a more general use of Dixon's Ticonderoga Flake Graphite! The only graphite that will build up the irregularities or cut parts of the bearings and to form a coating of wonderful smoothness and endurance.

THE MORAL IS OBVIOUS

Apropos to the recent "era of economy" inaugurated in a certain office where employees are required to return pencil stubs and other remnants of office supplies before receiving new articles of a similar nature, we are led to remark that those



offices equipped with Dixon's American Graphite Pencils are seldom visited by an "era of economy," for Dixon Pencils seem to inspire the greedy spirit of that well known small boy who emphatically observed, "There aint goin' to be no core!"

PURE, thin, flake graphite does what all mechanical methods fail to do—it builds up all the low places on a bearing surface forming a surface of marvelous smoothness and endurance



PERRY BELMONT'S WASHINGTON PALACE

The design for the beautiful Perry Belmont Residence, at Washington, D. C., shown in the above illustration, was made by E. Samson, of Paris. The architecture is in the style of Louis XIV, and surrounding the house is a narrow strip of parking which was made into a formal garden by Duchesne of Paris. The exterior walls are constructed entirely of Indiana limestone.

A unique feature of this \$500,000 home is found in the plan of the first floor, which is raised quite a distance from the ground level. Entrance is made by way of a porte-cochere. Instead of having the first floor consist of several reception rooms, an office and a dining hall, as is often found in buildings of this character, the plan shows the whole private portion of the house on the first floor.

Mr. Horace Trumbauer, architect of Philadelphia, also had a hand in preparing the plans and specifications, and took a very prominent part in superintending the construction of the Belmont Residence, which was built by George F. Payne & Company, also of Philadelphia. The part of this residence in which the Dixon Company was particularly interested was the structural steel, furnished by the American Bridge Company and erected by William Newman, Washington. Dixon's Silica-Graphite Paint, Dark Red, was applied at the shop by the American Bridge Company, and our Black in the field by William Newman.

A NEW SICKNESS

No matter what form of exercise or recreation comes along, there invariably seems to be an attending "sickness."

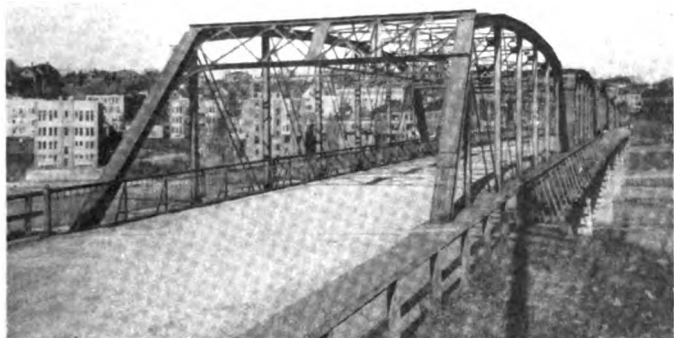
There is always a way to escape such sickness—that of not indulging in the pastime or recreation, and those of us who are content to keep our feet on mother earth need not fear the new malady, "air sickness." The air sickness which affects the aviator does not necessarily affect the mountain climber, even though the mountain climber may go quite as high.

In the first place, flight in a heavier than air machine necessitates the continuous concentrated, physical and mental effort and thus under conditions which render the slightest relaxation of grave peril to life and limb, thus producing an exalted state of nervous tension.

The enormous strain on the aviator and the resulting fatigue of nerve centers is so great that the eyes close of themselves from moment to moment in spite of the strongest desire to keep them open.

This and much more concerning air sickness we are told by the *Scientific American*.

DON'T forget that the reason graphite is used as a lubricant is because it is a surfacer and builds up on bearing surfaces a coating, thin, sleek and tough. If graphite does not settle in oils, how is it going to get to the seat of trouble?



HAVERHILL BRIDGE, HAVERHILL, MASS.

This beautiful and substantial bridge, of which Mr. George F. Swain of Harvard University was the consulting engineer, at the time of its erection in 1906 was painted with Dixon's Silica-Graphite Paint, and a recent inspection shows that the paint is in perfect condition, and likely to be for many years to come.

The expense and inconvenience of frequent repainting of structures is avoided when Dixon's Silica-Graphite Paint is used as a protector. It has an unequalled record of almost half a century. It was the first graphite paint made, and remains the first in quality, efficiency and economy.



MILLIONTH U. S. PATENT ISSUED

The millionth patent issued by the United States was announced by Commissioner of Patents Moore on August 5. It is for a puncture proof tire for automobiles and other vehicles, depending upon rubber springs for its resiliency, and is the invention of an Akron, O., man. So much interest had been displayed in the attainment of the number 1,000,000 that Commissioner Moore consented to announce the patent ahead of publication in the official gazette.

Although this patent bears the number 1,000,000, it is really No. 1,009,957. Until 1836, when the present bureau was organized, patents were issued without being numbered. Between 1790 and 1836, during which period patents were under control of the state department, 9,957 were issued.

A steady growth has been shown in inventive genius in the United States since the formation of the present bureau. In 1836 only 109 patents were issued, since when increases have been shown each year. During the calendar year 1909, 32,000 were issued, and in 1910 the number reached 35,118. It is believed this year will show an even greater increase. These figures do not include re-issues.

This is a marvelous achievement, and it is no exaggeration to say that a large percentage of the discoveries, appliances,

devices, etc., which have proved a blessing to mankind at large are due to the inventive genius of Americans. The world is indebted to America for the cotton gin, telegraph, sewing machine, Hoe printing press, the reaper and binder, air brake, incandescent light, typewriter, linotype machine, phonograph, telephone, flying machine and thousands of other inventions that have proved of inestimable value to all lines of manufacturing and commercial enterprises. This is a record of which America may well be proud and also points to the possibility of still greater achievements in days to come.

In announcing the millionth patent, Commissioner Moore said no application had been selected to receive this number. He said the application came up in the regular order of business, was numbered and carried through the regular channels and was signed without ceremony. Numerous requests were received from various inventors for this distinction, but all were denied.

THE proceedings of the eighteenth annual convention of The Air Brake Association, held at Chicago, Ill., May 23rd, 24th, 25th, and 26th, 1911, under the subject of "Recommended Practice," contains the following:

"The triple valve slide valve and its seat in the bushing should be lubricated with a high grade, very fine dry graphite, which should be applied as follows: After all oil and grease have been thoroughly removed from the slide valve and its seat in the bush, the dry graphite should be rubbed into the face of the slide valve, its seat in the bushing and the upper surface of the bush where the slide spring bears, with a view of filling the pores of the metal with graphite. After the graphite has been thoroughly rubbed into the parts mentioned, a light coating of loose graphite should be placed on the seat and the slide valve placed in the bushing."

In the same proceedings there is a very interesting article by Mr. Lincoln Leonard pertaining to the use of dry graphite as a lubricant for the triple valves. For this class of service the Joseph Dixon Crucible Company have put on the market their Air Brake Graphite, which is of the same high standard as all the Dixon products.

GRAPHITE WINS

How hard it is to convince some people of a good thing—we gave a man a sample of the Dixon Grease to cure a chronic hot pin, and it did; everything ran cool while he used the Dixon Grease, but when the sample was gone, he used a good mineral oil grease, because he happened to have it handy; after a while he noticed that the pin was warming up again and he came back to the Dixon Grease. Result; no hot pins now and Dixon's Grease is always used.

STANLEY L. BOWLES

We join with the members of our San Francisco Branch in extending sympathy to manager A. C. Bowles over the death of his younger brother, Mr. Stanley L. Bowles, at the Pasadena Hospital.

We feel sure that Mr. Bowles' great loss is shared by all who knew the lovable and attractive nature of Stanley and especially by the members of the San Francisco Branch with whom he had been associated during the past year or so.



THE LAFAYETTE HOTEL, BUFFALO, N. Y.

A Sequel to Page 400, Vol. VI, No. 10 of "Graphite" (1904)

Over seven years ago the beautiful Lafayette Hotel opened its doors for the reception of guests and the Convention City rejoiced over the elaborate inside furnishings which have since pleased the eyes of visiting thousands.

Ever since its erection this hotel has steadily grown in favor, and in 1910 the owners were obliged to consult with Bethune & Fuchs, the original architects of the hotel. Plans for an enlargement were drawn and the work recently completed from these plans, first by the American Bridge Company, Fabricators, and then by John Lannen, Mason and Builder, are in all respects equal to the previous work upon this structure.

At the time of erection, Dixon's Silica-Graphite Paint was selected as the best protective agent for the structural steel work, and so well has time vindicated this choice that Dixon's Silica-Graphite Paint was applied to 800 tons of steel used in the recent addition. This is but another of the many instances where the test of time has proved the durability of Dixon's Paint.

"IF IT'S A DIXON IT'S ALL RIGHT"

A personal letter from the director of drawing of a city that need not be named, addressed to the School Department of the Dixon Company, has in it this interesting paragraph:

"It seems to me that the "Dixon Pencil" might be used as a standard of excellence—in fact—if the truth were known—it is so used. I have often heard it said that such and such a pencil was as good as a Dixon—which was perhaps true and which, by the way, speaks well for such and such a pencil. I have never heard, however, that such and such a pencil was better than a Dixon (excepting by those who make pencils other than Dixon's.

"Now I am not hitting the other fellow when I say this, if it's a Dixon it's all right. I have found that there are Dixon's

and Dixon's, but no bad Dixon's. I have never used a Dixon which didn't make good. A Dixon will balance its price every-time.

"I have used the Dixon Pencil in preference to others ever since I was a student more than twenty years ago. I have learned by experience that this pencil will prove satisfactory—if all the drawing which I have made with a Dixon were proportionately and generally as good as the pencils I used in making them—say—wouldn't I be the draughtsman!"

If we were to mention the name of this director of drawing, he would be quickly recognized, but courtesy forbids.

HARVEST MOON

The phenomenon which is usually called "Harvest Moon," is not an accidental occurrence; it is a scientific consequence of the motion of the moon.

The moon revolves round the earth in an easterly direction, and in general it rises some forty-eight minutes later and sets forty-eight minutes earlier for every day of its age. But this retardation, as it is called, is not uniform; it depends upon the inclination of the moon's orbit to the horizon, and is the least when this angle is least.

It is fortunate for the farmer that this occurs near autumnal equine, September 23rd. At about this date the moon fully rises and sets for several evenings with a daily retardation of only fifteen to twenty minutes; and the increased period of moonlight thus given has earned for this moon the title of the "Harvest Moon."

A SMALL boy returned from the home of his grandparents and was told that while he was away the stork had brought him a baby brother.

"Go right in and see him," said his aunt.

"I'd rather see the stork," replied the boy.

—Everybody's Magazine.

SOME CURRENT THOUGHTS ON THE SUBJECT OF GRAPHITE

In *Locomotive Firemen and Enginemen's Magazine*, an engineer tells what he would do for an extremely hot main pin on a fast, heavy, important run. He says a tight brass will bind on the pin and cause heating, and suggests the use of a grease, preferably mixed with a little graphite, if the engine is fitted with grease cups and grease is available.

An inquirer asks through the *Paper Trade Journal* for a cure for hot journals. The reply is that graphite is an invaluable lubricant for bearings subjected to high temperatures. "Its lubricating qualities at all temperatures are so high that it forms a very valuable addition to almost any oil." It further suggests that when a bearing is loosened and cleaned, oil with graphite should be applied and the results noted.

The *Office Outfitter* has an article on graphite production made up from the Government Statistics on the subject of graphite.

Railway Age Gazette for June 2nd has a very interesting and instructive article, entitled "Lubricating Locomotive Valves and Cylinders with Graphite." The article gives the result of tests made by the Long Island Railroad Company, and the article will prove exceedingly interesting to all master mechanics and superintendents of motive power of railroads who may be fortunate enough to have that particular copy of the *Railway Age Gazette*.

In the *American Marine Engineer*, Mr. Charles J. Mason considers graphite "a good protective against corrosion for both inside and outside surfaces of boilers. It is usually mixed with oil and applied with a brush as though it were paint. It will fill in all uneven places, and the rougher the surfaces are the better will the graphite cling and the longer will it stay on." Boilers that are occasionally treated with graphite will resist corrosion for a long while.

SOME PECULIARITIES OF MOLYBDENITE

Molybdenite very much resembles graphite and is frequently taken for it, although there is quite a difference between the two. Molybdenite gives a dark greenish streak while graphite gives a lead gray streak. Molybdenite has a bluish gray color, while graphite has a shining black to gray color. Molybdenite will give a light yellowish-green flame, especially if thin pieces are taken, upon which is placed a drop of muriatic acid, and placed in the hot part of a candle flame. Graphite gives no distinct flame color. Sometimes molybdenite will give the odor of decaying eggs when muriatic acid is placed upon it. Graphite gives no odor at all. Molybdenite is found in granites and gneiss like graphite, but is much more valuable. Its chief use is in the hardening of steel and while the price fluctuates somewhat, it is worth about twenty-five to thirty cents per pound or from \$500 to \$600 per ton.

—*The Mining World*.

A VERY exclusive language is the Maltese, as only about 300,000 people speak that language. It resembles Arabic so closely that Arabs from North Africa can make themselves understood in Malta. There is much Italian in the language and Italian is the foreign language best understood by the merchants of Malta.

"HE IS A LIAR!"

It is said that Mr. Roosevelt never hesitated to call a man a liar when he really believed him to be. However, to call a man a liar is more or less evidence of loss of temper, which doesn't always, if ever, pay.

What, however, can be said of a manufacturer and what respect can be entertained for him when, not satisfied to tell the merits of his own products, he misrepresents other manufacturers?

The Joseph Dixon Crucible Company were the first to fully bring to the attention of architects, builders and others, the protective value of a graphite paint and the even greater value of a silica-graphite paint.

We pointed out the peculiar value of the silica, told how it gave added endurance to the softer pigment, graphite, the same as the alloy does in a 12 or 14 karat gold chain or watch case.

We have always advertised it as a silica-graphite paint and have said time and again that the silica is not added but is associated with the graphite when it is mined.

We have further, time and again, pointed out that as miners and importers of graphite of all kinds, from the very cheapest amorphous to the finest quality of flake and crystalline graphite, we had the choice of all and used only that which our experience of over forty years had fully demonstrated to be the best pigment for a protective paint.

Yet, now there comes along a manufacturer who, in order to find buyers for his own product, claims that his paint is the "purer graphite paint," meaning that it contains more graphite and that Dixon's "is a graphite paint in name only, as analysis shows it contains silica, silica being purposely added to reduce cost of production."

Dixon's is a silica-graphite paint, so labeled; so advertised, but, as we have said before, the silica is not added but mined with the graphite. It is an ideal paint pigment, has a worldwide reputation of nearly fifty years, and is still going.

OUR Mr. H. E. Westervelt, who is giving attention to the Dixon line in Northwest Canada, writes us as follows. Following our usual custom, we leave all names blank.

The chief engineer of the ——— Mills at this point has advised me today that the Dixon Cup Grease bought from me last February is the best he ever used. Lasts longer and much better results. Will not use anything else in the future, plenty on hand to last this fall.

Superintendent of mills says Dixon's Gear Grease just as good as Cup and will reorder when they need more.

Stable foreman reports on Dixon's Axle Grease never saw such long life grease. Wears on axle forever and you use so little. Enough on hand to last this fall. Sold them today eight brushes with tails and five gallon Dixon's Silica-Graphite Paint, and if these work out like grease we will get their paint business.

WHY DIXON'S PENCILS ARE POPULAR

"Are you troubled by the Black Hand?" asked one New Yorker.

"Frequently," replied the other, "every time I fill a fountain pen."—*Washington Star*.



"You can do no greater good to a tired writing hand than to give it a smooth writing DIXON. At all stationers."



THE PASSWORD



IN three places, in three states,
three industries for over fifty
years have worked together constant-
ly building a world wide reputation
for



DIXON'S AMERICAN GRAPHITE PENCILS



These industries, a mine, a mill and
a factory, established the quality of
their product years ago, and to-day
the name DIXON is the password
between those who buy and sell
pencils.



Joseph Dixon Crucible Company
Jersey City, N. J.



"If, unfortunately, you are often obliged to borrow a pencil, you will discover that there are many other discriminating users."



GRAPHITE

VOL. XIII.

NOVEMBER, 1911.

No. 11.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

THE FIRST AMERICAN GRAPHITE MINE

In going through some old matter we came across an article which appeared in the *New England Magazine* under date of November, 1903, which gives an account of what is said to be the oldest graphite mine in the United States—in fact the oldest mine of any kind in the country. This mine is located in the southern part of Massachusetts, within a mile of the Connecticut boundary line. The article states that the mine had been visited by the Indians from time immemorial and was made known by them to the English in 1633. This mine came into the possession of John Winthrop, the son of Governor Winthrop. The magazine article goes on to relate the various difficulties met with as a result of crude

facilities, thin veins, and impediments to transportation, which made the mine a source of expense rather than revenue. It was worked off and on, however, for almost two centuries.

Mining ventures were evidently as uncertain in those days as they are now, and there existed the same amount of exaggerated report. For instance, a letter from one of the Winthrops in England to the superintendent of the mine in America runs as follows:

"The Black Lead you have Dugg and Sent over proves Extraordinary, and is certainly the Best that is known in the World, it is admired by all Disinterested and Undesigning persons, tho there is some people that have private Views wou'd seem to slight and Undervalue it. But I doe assure you it contains a Fifth part Silver, but this you must keep as a secret and not talke to any body about it further then it is to make pencills to marke downe the Sins of the People."

As a matter of fact, a London assayer reports the true condition of the ore as follows:

"I have tried your Samples of Ores, but none of them are of any Value except the Black Lead. That which you call a Silver Ore is almost all Iron, nor can any other metal be got from it that will pay the charge of refining; and this you may be Satisfied in, by Calcining a piece of that Ore, then pound it, and the Loadstone will take it all up; which is full conviction."

In addition it appears that Winthrop's idea of the value of black lead was considerably exaggerated, since he quotes its value at "Sixteen shillings a pound," while the maximum

market price for black lead at this time was "Sixteen shillings for one hundred pounds."

Getting down to the second quarter of the nineteenth century, we learn that Frederick Tudor of Boston acquired the mining property and was the first owner to whom its possession did not bring a loss. We are interested to learn that the actual working of the mine occurred under the superintendence of Captain Joseph Dixon. The connection between Frederick Tudor and Dixon was soon severed, however, and the latter founded what is now the Joseph Dixon Crucible Company, beginning at that time with a crucible works. We quote from the article:

"... Joseph Dixon, who later attained great distinction as an inventor, organized the Dixon Crucible Company, which speedily became a large and thriving concern, and remains so to this day, while the qualities of the Dixon Pencil are known to every reader of this story."

The Tudor management came to an end in the '50's. We take it that when this management first undertook the work that better appliances and more intelligent direction resulted in lowering the cost of operation, so that the price for which graphite was sold yielded a margin of profit. After some twenty odd years, however, competition lowered the price to a point where the operation of the mine became financially unprofitable. The mineral described occurred in thin veins, running through exceedingly hard rock. The principal vein was inclined at an angle of something like seventy degrees. In addition to this, considerable trouble was experienced in draining the mine so that often work had to be suspended on account of the water.

It is rather interesting to look back over the early attempts in the graphite field, and especially so to us in view of the fact that the founder of this company got his first practical knowledge of graphite from the original Winthrop mine in Massachusetts.

LAKE OF SODA

This famous lake is in East Africa. The lake is described as a few inches of redish water covering a bottom resembling pink marble, the whole forming an area of at least twenty square miles, covered with a deposit of solid soda.

After the wet season, which is very short, the whole of the surface becomes dry, with the exception of a margin about thirty yards wide.

The deposit is divided into several distinct horizontal layers of which the top layer is about ten inches thick. It has been estimated that the quantity of soda represents about 200,000,000 tons.



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

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BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

PREVENTIVES AND REMEDIES

The following appears in the August 19th issue of the *Automobile Topics*:

Comparatively few owners and drivers of motor cars seem to realize the necessity of oiling not only the spring shackles, but the leaves themselves. The latter should be lubricated, if for no other reason than eliminating the annoying squeak that accompanies a dry spring. The best lubricant for this purpose is a mixture of ordinary oil and graphite or the regular graphite grease that is on the market. To facilitate the injection of the grease between the leaves, the frame of the car should be jacked up until the axle partially hangs by the springs. This will open the leaves and with the aid of a thin

stick the grease can be spread easily. A screwdriver or similar tool can be used without harm to further spread the leaves if necessary. It is best to be liberal in the application of this grease to insure its being squeezed over the whole surface when the frame is let down. The surplus can be wiped off and with this treatment the leaves will not require attention for another season."

We want to emphasize what *Automobile Topics* has to say in this connection.

The other day we had occasion to look at some springs that had been dismantled, the automobile having been on a continuous trip for about two thousand miles. The springs were badly rusted and at various points they were worn to a smooth bearing surface, showing the great amount of work which the springs had to do and also the fact that most of the wear comes at certain points rather than being equally distributed along the leaves.

When the spring leaves are not properly lubricated, there is sure to be wear and rust which weakens the leaves, and when a sudden shock comes there is a break which could be absolutely prevented by the judicious application of Dixon's Flake Graphite as indicated above.

TRADING ON ANOTHER'S GOOD REPUTATION

Because of the great reputation of Dixon's Ticonderoga Flake Graphite, there are several parties who are either unscrupulous or who are ignorant of graphite, who are offering "just as good" graphite at a price slightly less than Dixon's. In the first place, there is no graphite "just as good" as Dixon's. There is graphite just as pure, but not just as good for lubricating purposes. The fine amorphous graphite used so largely for lead pencils is just as pure, possibly has a greater degree of purity than the Ticonderoga graphite, but it is not at all suitable for lubricating purposes when compared with Dixon's.

Dixon's Ticonderoga Graphite is the standard because the experiences of the most careful mechanics and engineers and scientific men for the past thirty years, has demonstrated that there is no graphite other than Dixon's Ticonderoga Graphite that will do the work so well. It is what a thing has done that makes it standard, not what some people think it will do.

The occasion of this article is that a customer of the Dixon Company wrote that they were able to buy from another dealer Dixon's Graphite at two cents per pound less than we were charging and asked how it was that he could not obtain the same price direct from Dixon. We followed the matter up promptly and thoroughly with the result that we obtained from a certain dealer a letter as follows:

"Upon investigation we find that in error we did send out one lot of this graphite where Dixon's Graphite had been quoted.

"We were persuaded some time ago to try this particular grade of graphite upon the recommendation of the agent of the manufacturers who over-persuaded us that this graphite was practically the same thing as Dixon's. In filling this order Dixon's Graphite should have been sent as quoted.

"We assure you that hereafter we will not substitute this graphite where Dixon's is specified."

DIXON'S graphite publications sent free upon request.

THE GRAPHITE STIRRER

It is such a well-known fact that iron is injurious to copperous metals that to enumerate the many bad features of an iron skimmer is almost a waste of time. It is, however, passing strange that a melter who insists on having all chips run through the magnet machine several times, to get out the last trace of iron, will then with the contented mind of one who is sure that his work is well done, calmly stir with an iron rod the metal that he has so carefully treated to eliminate this very iron. It is like carefully weeding one's lawn and then scattering over it dock and pig-weed seeds.



If there is any reason to fear iron in your metal, a graphite stirrer is by all means the most satisfactory. Care must be taken in its handling and it should be hung up or placed in a safe place after use, otherwise it may be broken. The graphite stirrer being made of the same material as a crucible, it is of course impossible for any foreign substance to get into the metal by its use.

The United States Mints use a graphite stirrer of a peculiar shape. It is in fact really more of a "churner" than a stirrer. This stirrer is fitted to an iron rod and is worked up and down in the molten metal in the same manner as a churn. By this process the metal is mixed more thoroughly and rapidly than by simply stirring.

The Joseph Dixon Crucible Company manufacture a variety of shapes and sizes of stirrers, also a holder into which the graphite stirrers can be fitted, as they become from time to time worn out or broken.



STIRRER HOLDER, Showing Insertion of Stirrer

Care should be taken to anneal the graphite stirrer before its initial use, in the same way a graphite crucible is annealed.

If the graphite stirrer is once carefully annealed, satisfactory results are always obtained.

BEHOLD THE FISHERMAN

He riseth up early in
the morning and disturbeth
the whole household.

Mighty are his preparations.
He goeth forth full of hope and when
the day is far spent, he returneth smelling of
strong drink and the truth is not in him.

—Copied from the *Empire Sun Club*, Pajaro, Cal.

DIXON'S ELEVATOR GREASE

The Dixon Company have had on the market for a long time a graphite waterproof grease which has been found most satisfactory and efficient in elevator use. As the name implies, this grease (a mineral oil grease) is waterproof in every sense of the word, having incorporated in it the correct proportion of the Dixon Pure Flake Lubricating Graphite. It is with much pleasure that we reproduce the following letters concerning this grease:

UNION TRUST COMPANY OF MARYLAND

BALTIMORE, Md., Sept. 19, 1911.

Joseph Dixon Crucible Company.

GENTLEMEN:—I am so much pleased with your waterproof grease which I am using on the plungers of the elevators of the Union Trust Building and Belvedere Hotel of this city, that I feel a word in connection with its recommendation would not be out of place and might be of some service to the men engaged in the same occupation as myself. I find that its lubricating qualities are better than anything I have ever used and that water will not affect its lubrication. In these buildings it has withstood some severe tests.

I have used your waterproof grease for some years and will always continue its use. I have not been able to find a grease that has its equal as far as lubrication is concerned, under conditions of water. As for the saving, I want to say prior to using your grease, I used a half barrel of cylinder oil, at forty-five cents per gallon in eleven months, at a cost of \$13.50. In May 1910, I purchased one keg of Dixon's Graphite Grease at a cost of \$21.43. I have on hand on September 19th, 1911, \$18.75 worth of grease, which leaves the cost of lubricating my cylinders and plungers in the Union Trust Building for fifteen and one-half months at \$2.68.

Hoping this will be some advantage to the men operating elevators, I remain,

Very truly yours,

JOS. P. BURNETT, Supt.

HOTEL CAPE MAY

CAPE MAY CITY, N. J., September 9, 1911.

Joseph Dixon Crucible Company.

GENTLEMEN:—Your favor of September 8th received and contents noted, and you are right in supposing that we use the waterproof grease for lubricating our plungers in the elevator system, and from all accounts same appears highly satisfactory; at least our engineer commends it and we have every confidence in his opinion.

Very truly yours,

HOTEL CAPE MAY,

JNO. P. DOYLE, Manager.

REAL MODESTY

"An actor should be modest, and most actors are," said James K. Hackett, at a luncheon in Pittsburgh. "But I know a young actor who, at the beginning of his career, carried modesty almost too far."

"This young man inserted in all the dramatic papers a want advertisement that read:

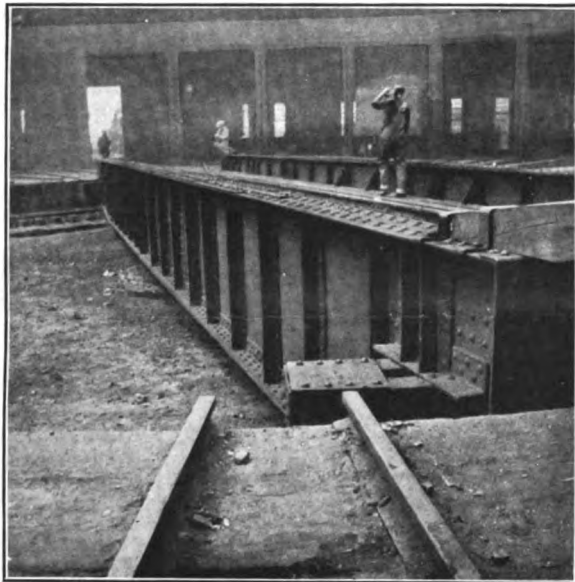
"Engagement wanted.—Small part, such as dead body or outside shouts, preferred!"—*Tribune*.

STANDING TIMBER

"Not a Stick of That Has Been Cut For Many Years"

In September GRAPHITE we made a statement that the Dixon Company "is on 'Easy Street' in the matter of pencil wood, having at least fifteen years' supply of cut cedar and owning nearly seventy thousand acres of cedar land in Florida on which not a stick of standing timber has been cut for many years." An unknown friend of ours of the Seaboard Air Line in Atlanta, takes the opportunity afforded him at the noon hour and a generous lunch to have quite a little amusement at our expense and he is quite right, as our statement was a very near-Irish bull statement.

What we intended to say was that during the many years that the cedar has been growing, we have not cut a single stick of growing timber, our practice being simply to cut the fallen timber or the dead wood. In other words, that we have not cut a single stick of standing timber that was alive and growing.



THE accompanying illustration, which is of special interest to railroad men, shows one of the large turn-tables in the Boston yard of the N. Y., N. H. & H. R. R. The steel work of this turn-table is well protected from corrosion with a thorough coating of Dixon's Silica-Graphite Paint.

It is interesting to mention that Dixon's Waterproof Grease has proved excellent as a lubricant for turn-tables and is being used with much success for this purpose.

PASSING OF THE PICTURESQUE

Will all the picturesque and romantic features of the world be entirely lost to the coming generations?

The American Consul in Tripoli states that the caravan trade on the Soudan has practically ceased. Only 100 camels are now engaged in the trade from Tripoli to Kuka where ten years ago 10,000 camels and donkeys and 1,000 men were employed and the cargoes frequently reached a value of \$1,000,000. In 1910 this dropped to a total of \$271,000.

The opening of navigation on the Niger and the construction of railroads has provided a safer and cheaper line of communication to the South and caravans are doomed.

A NEW YORK boy brought home with him from college a friend who had not visited the metropolis for ten years. After a day of sightseeing, the two were walking down Broadway near Twelfth Street.

"Oh, Jack," said the guide suddenly, "you remember Grace Church, don't you?"

"Let's see," replied the other with signs of interest, "what company was she in?"—*Everybody's*.

A SAILOR had just shown a lady over the ship. In thanking him she said: "I am sorry to see by the rules that tips are forbidden on your ship."

"Lor' bless you, ma'am," replied the sailor, "so were apples in the Garden of Eden."—*Everybody's*.

FOILED

He was very bashful and she tried to make it easy for him. They were driving along the seashore and she became silent for a time.

"What's the matter?" he asked.

"O, I feel blue," she replied. "Nobody loves me and my hands are cold."

"You should not say that," was his word of consolation, "for God loves you, and your mother loves you, and you can sit on your hands."—*Success*.

WILLIAM had just returned from college, resplendent in peg-top trousers, silk hosiery, a fancy waistcoat and a necktie that spoke for itself. He entered the library where his father was reading. The old gentleman looked up and surveyed his son. The longer he looked, the more disgusted he became.

"Son," he finally blurted out, "you look like a d— fool!"

Later the old Major who lived next door came in and greeted the boy heartily. "William," he said, with undisguised admiration, "you look exactly like your father did twenty-five years ago when he came back from school!"

"Yes," replied William, with a smile, "so Father was just telling me."—*Everybody's*.

FROM some examination papers in a Massachusetts—we repeat, Massachusetts—town:

"Capillarity is when milk rises up around the edge of the bottle and shows good measure."

"The settlers gave a Thanksgiving dinner to the Indians for their kindness, and to the Lord for fair weather. They kept up their festivities for three days, eating all the time. A party of sixty Indian warriors came, rolling their war-hoops down the hill."

"Henry VIII, by his own efforts, increased the population of England 40,000."

"Esau wrote fables and sold them for potash."

"The Lupercal was the wolf who suckled Romeo and Juliet at Rome."

"Lincoln has a high forehead which is a sign of many brains."—*Everybody's*.

WHAT WE MAKE AND WHERE WE SELL

A well known magazine and general advertising agency ask if they can serve us in any way, and they send us a blank to fill out.

As the Joseph Dixon Crucible Company is the only concern of the kind in the world, it may be interesting to our readers if we repeat here the answers to some of the questions asked us. The questions themselves can be inferred.

The Joseph Dixon Crucible Company manufacture graphite products of all kinds, such as graphite crucibles, graphite lead pencils, graphite stove polish, graphite lubricants, graphite paint and graphite products for all known industries in all parts of the world.

The Joseph Dixon Crucible Company sells to jobbers, to retailers and to consumers without any conflict of interest.

The Joseph Dixon Crucible Company has many branches and a hundred or more salesmen who cover not only the United States, but the entire civilized world.

The Joseph Dixon Crucible Company's goods are branded and trade marked in all of the important civilized countries.

There is probably no new territory, but sales might be largely increased in all of the states and countries where the Dixon products are now already known, and well known by name and by use.

The principal advantage of the Dixon products may be said to consist in the satisfaction they give and the economy they produce.

STANDING before his dresser after coming home rather late from the club, he picked up his hair brush when he reached for his hand mirror. He held it before his face for a moment and then said to himself:

"Great Scott, old man, you need a shave!"

—*Everybody's Magazine.*



YOU can be certain of finding the same quality of *straight-grained cedar* and *gritless smooth leads* in all of

**DIXON'S
AMERICAN GRAPHITE
PENCILS**

They express finality in goodness of material, and careful workmanship. Eighty-four years use of this principle has made Dixon the pencil-word.

JOSEPH DIXON CRUCIBLE
COMPANY, Jersey City, N. J.
Send for Dixon's Pencil Guide—gratis

TRANSMISSION LUBRICATION

Taken from the H. H. Franklin Mfg. Co.'s Sheet of Instructions

Next to the motor in importance of lubrication comes the transmission, on which there is much wear and strain from shifting the gears and from the power transmitted through them. As two or three teeth only are engaged in any pair of gears at any time, the pressure brought to bear upon so small a surface as a gear tooth is very great. It is, therefore, essential that proper lubrication be given these parts if their life is to be prolonged and their action kept smooth.

A good lubricant must have sufficient body to allow the formation of a cushion or film between the rubbing metal parts. Many drivers use a mixture of oil and grease for the transmission, but this is not the best practice, owing to the ultimate separation of the ingredients, the heavier elements going to the bottom of the case, where they will not be picked up by the rotating gears. Neither is heavy grease alone advisable, for the gears only cut channels in the grease (this being especially true in cold weather), and as a rule this form of lubricant will not soften enough to permit thorough lubrication.

For Franklin transmissions, we recommend a heavy black oil, such as ——— or steam cylinder oil. It is advisable to add a few ounces of pure *flake graphite* to this and never to fill the case to level of the gear shaft. A depth of 2½ inches is usually sufficient. Attention to these suggestions will aid materially in avoiding any transmission troubles.

—FRANKLIN AUTOMOBILE COMPANY.

THE COST OF ONE LEAD PENCIL EQUALS TWO-MILE FREIGHT HAUL

The Pere Marquette Railroad in the current issue of the *Railroad Employes' Magazine*, endeavors to show their employes how five or ten cents a day may be saved and among other bits of information they tell them that the cost of a lead pencil equals the cost of hauling a ton of freight two miles. For every new lantern that they have to buy they must haul a ton of freight 100 miles. For every gallon of engine oil they must haul a ton of freight fifty miles, and so on through quite an interesting list.

JAMES J. HILL, the railroad king, told the following amusing incident, happening on one of his roads.

"One of our division superintendents had received numerous complaints that freight trains were in the habit of stopping on a grade crossing in a certain small town, thereby blocking travel for long periods. He issued orders, but still the kicks came in. Finally he decided to investigate personally.

"A short man in size, and very excitable, he went down to the crossing and sure enough, there stood in defiance of his orders, a long freight train anchored squarely across it. A brakeman who didn't know him by sight sat complacently on the top of a car.

"Move that train on!" sputtered the little 'super.' 'Get it off the crossing so people can pass. Move it on, I say!'

"The brakeman surveyed the tempestuous little man from head to foot. 'You go to blazes, you little shrimp,' he replied. 'You're small enough to crawl under.'"—*Cosmopolitan.*



THE convention of the Master Car and Locomotive Painters Association was held at the Hotel Rudolf, Atlantic City, N. J., during the week of September 10th to 16th, and as usual the Dixon Company was "on the job," with headquarters located in Parlor K, adjoining the main entrance to the convention hall on the parlor floor.

The Dixon Company was represented by Mr. H. W. Chase from the Home Office, Mr. John J. Tucker from the Philadelphia office, and Mr. E. R. Smith from the Chicago office.

The reports of the railroad delegates representing the most prominent railroads throughout the country, showing the exceptional results of durability and the resulting economy being obtained by the use of Dixon's Silica-Graphite Paint for all bridge and structural steel work, were most gratifying, and the same can equally be said regarding the use of Dixon's Front End Finish for locomotives.

The great increase in the demand for both of these Dixon products is evidently built on the best sort of a foundation, being that of actual experience, which has resulted in equally absolute economy.

Our many friends will undoubtedly be interested in the above photograph, taken during the convention.

DIXON's graphite publications sent free upon request.

AN UNFORTUNATE ACCIDENT

The American racing craft Dixie IV was unable to compete in the Gold Challenge Cup Race on the St. Lawrence, because of the condition of her engine bearings. The bearings on the forward engine had been grinding away without oil, owing to the failure of the oil pump.

Had it been possible, and it probably was, to introduce Dixon's Flake Graphite, we have every reason to believe there would have been no accident and that Dixie IV would have won.

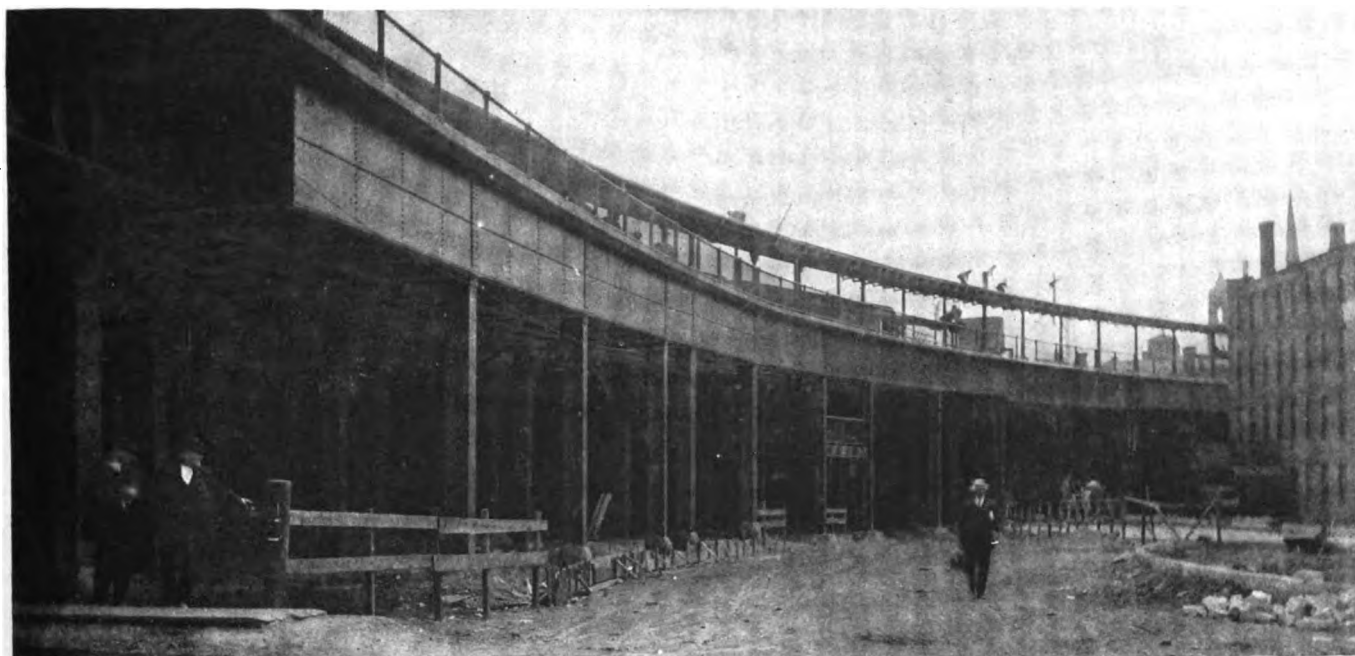
Dixon's Flake Graphite prevents the seizure and tearing of the microscopical irregularities that exist on all bearings. The thin flakes of graphite build up the surfaces so there is a graphite-to-graphite contact instead of a metal-to-metal contact. A bearing so treated must not be expected to run entirely without oil, but it will run with less oil and with an inferior oil and will not seize. It pays to make use of Dixon's Pure Flake Graphite in many places on a motor boat.

CONSIDERATE

Magistrate (to prisoner): If you were there for no dishonest purposes why were you in your stocking feet?

Prisoner: I 'eard there was sickness in the family.

—Punch.



THE accompanying illustration shows a section of the Front Street Viaduct of the N. Y., N. H. & H. R. R., and Boston & Maine R. R., recently completed in connection with the great improvements which have been made in Worcester, Mass.

The viaduct is 490 feet long and contains 1864 tons of structural steel. It is built exceptionally strong from the most modern designs. The steel work of this interesting structure is well protected with Dixon's Paint, which has proved exceptionally valuable for the protection of steel work exposed to severe conditions.

THE POWER OF RADIUM

We doubt if there is a reader of GRAPHITE who has not heard of radium, but possibly few of us have really comprehended its power.

Sir William Ramsay tells us that a ton of radium would propel for thirty years a ship of 15,000 tons with engines of 15,000 horsepower at the rate of fifteen knots an hour—a task that would require a million and a half tons of coal. In other words, the potential energy of radium is a million and a half times that of coal.

Unfortunately, Sir William Ramsay makes it clear to us that the greatest possible production of radium is a half an ounce a year, and to secure the ton that would work the marvel that he describes would require some 64,000 years.

Long before that number of years roll around, we shall have lost all interest in such matters.

WHAT DIRECTION ARE WE GOING?

We are quite familiar with the points of the compass and many of us know of the variations of the compass as we travel over the surface of the earth; furthermore, it is hoped that most of us are able to locate the North Star when visible. Few of us, however, very few, can tell anything about the motion of the earth further than that it is turning easterly at the rate of about 1,000 miles an hour.

But that rotating motion, constantly changing our direction

in relation to all outside the earth, is quite subordinate to another, far more rapid motion that is carrying us and the earth around the sun eastwardly on an entirely different curve at the rate of about nine miles a second, ever changing our direction in relation to the stars, in a circular path 279,000,000 miles long.

And yet that is not a key to our direction, for we with our tiny earth and our third rate sun, with all of its planets, are travelling as an united group in one direction, differing from all those mentioned.

If you will locate the large, first magnitude, bluish-white star, Vega, in the Constellation Lyra, you will be looking in the direction that our solar system is taking through space.

If you will observe the stars around Vega for a few hundred years, you will find that they are apparently slowly separating. This means that we are moving toward Vega.

This motion is in a circle that cannot be exactly measured, but there is evidence to show that it will require 18,200,000 years for us to reach there.

Perhaps, after all, we are not moving toward Vega, but that we are with Vega and all of the stars that we can see on the clearest winter nights moving in the same general direction around some great common center yet unknown.

*Joseph Dixon Crucible Company,
Jersey City, N. J.*

GENTLEMEN:—We have hard work to keep a supply of your No. 521 Blue Lumber Crayons; we use them to mark barrels and boxes in shipping sweet potatoes and vegetables. This crayon is the best we ever used.

Yours truly,

"TOMMY," the schoolma'am asked, "why are you scratching your head?"

"'Cause nobody else knows just where it itches."

—*Everybody's Magazine.*

AS WE SEE OURSELVES IN SOUTH AMERICA

Hiram Bingham, Delegate of the United States Government and of Yale University to the First Pan-American Scientific Congress held at Santiago, Chile, in December and January 1908-9, has written a very interesting book entitled, "Across South America." In it he tells us that a marked peculiarity of the Brazilian market is its extreme conservatism. Brazilians who have become accustomed to buying French, English and German products are loath to change.

American products are unfashionable. The Brazilian who can afford it travels on the luxuriously appointed steamers of the Royal mail, and he and his friends regard articles of English make as much more fashionable than those of the United States.

This is largely due to the lack of commercial prestige which we enjoy in the coast cities of Brazil. The Brazilians cannot understand why they see no American banks and no American steamship lines. Our flag never appears in their ports except as it is carried by a man-of-war or an antiquated wooden sailing vessel. To their minds this is proof conclusive that the American who claims that his country is one of the most important commercial nations in the world, is merely bluffing.

The agents our exporters have sent to Brazil rarely speak Portuguese and are unable to compete with the expert linguists who come out from Europe. Frequently they even lack that technical training in the manufacture of the goods they are trying to sell which gives their German competitors so great an advantage.

Speaking of Buenos Aires, Mr. Bingham says she will always maintain her political and commercial supremacy. Already ranking as the second Latin city in the world, her population equals that of Madrid and Barcelona combined.

You will marvel at the great number of foreign banks, English, German, French and Italian. With their fine substantial buildings and their general appearance of solidity, they have taken a firm grip on the situation. One looks in vain for an American bank or agency of any well-known Wall Street house. American financial institutions are like the American steamers—conspicuous by their absence.

VICTORIA, YARRAWONGA, AUSTRALIA, Aug. 19, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

DEAR SIRs:—The following, no doubt, will be of some little interest to you. A customer of mine, Mr. Pat Corbett of Mulwala, N. S. Wales, last season pulled a load of 240 bags of wheat (about twenty tons) over eighteen miles of road which was anything but good, with twenty-two bullocks. This is a record for the Riverina District.

He used your graphite grease and says that this grease will carry a heavier load than any other on these markets.

Another gentleman of Mulwala tried to beat this record with twenty-two bullocks and six draught horses, but broke down on the bridge over the Murray here.

The incident has sold many a tin of your grease here for me and I hope will do the same for you.

Yours faithfully,

S. T. BOWLES.

The tests given our grease by Mr. Corbett of Mulwala, surely indicate that it makes considerable difference what kind of

grease is used on axles. Oftentimes customers are inclined to buy cheap stuff in order to save a few pennies, but it pays to always use the best the market affords, if for no other reason than for the protection given against the many annoyances attending the use of inferior products. It is for this reason that Dixon's Graphite Axle Grease has the unqualified approval of discriminating customers the world over. It is the best that can be procured and is therefore the standard by which all other greases are judged.

SOMETIME ago our Crucible Department sent out a little card giving the melting points of metals. This proved so popular with our customers, that we decided to have another edition printed and add thereto the Specific Gravities of Metals.

If anyone of our readers would like one of these cards for use in the melting room, we shall be glad to send same.

The following is a facsimile:

COMPLIMENTS OF THE				
JOSEPH DIXON CRUCIBLE CO.				
JERSEY CITY, N. J.				
CRUCIBLE MAKERS SINCE 1827.				
	SPECIFIC GRAVITIES	MELTING POINTS		
		Degrees Centigrade	Degrees Fahrenheit	
Mercury	13.59	—39	—38	
Tin	5.84	232	450	
Bismuth	9.75	269	516	
Cadmium	8.64	322	612	
Lead	11.34	327	621	
Zinc	7.14	419	786	
Antimony	6.62	630	1166	
Magnesium	1.69	632	1170	
Aluminium	2.58	657	1225	
Calcium	1.41	780	1436	
Barium	3.75	850	1562	
Silver	10.53	962	1764	
Gold	19.32	1064	1947	
Copper	8.91	1065	1949	
Cast Iron—White	7.58	1075	1967	
Manganese	7.42	1245	2273	
Cast Iron—Gray	7.03	1275	2327	
Steel	7.60	above 1375	2507	
Nickel	8.60	1465	2637	
Chromium	6.92	1515	2759	
Cobalt	8.72	1528	2782	
Palladium	11.40	1540	2804	
Platinum	21.48	1780	3236	
Iridium	22.42	2200	3960	
Tantalum	14.49	2275	4127	
Graphite	2.25		Infusible	
LOW FUSION ALLOYS				
			Deg. Cent.	Deg. Fahr.
4 Bismuth	1 Cadmium	2 Lead	1 Tin	65 149
5.1 "	1 "	2.78 "	1.33 "	70 158
3.7 "	1 "	0.93 "	1.06 "	80 176
1.17 "	0 "	1.16 "	1 "	90 194
8.75 "	0 "	3.48 "	1 "	104 219
208 "	0 "	207 "	119 "	122 251

A MATTER OF YEARS

FROST—What's the difference between a debutante and a suffragette?

SNOW—About twenty years.

ANIMALS THAT SMOKE

A writer in the *London Chronicle* tells us that while he was extracting solace, after the petty worries of the day, from his well-seasoned briar, it was suddenly revealed to him what sort of creature he really was. He happened to read that there are but three kinds of animals which generally use tobacco; the rock goat of Africa, whose stench is so insufferable that no other animal can approach it; the tobacco-worm, whose intolerable visage gives to every beholder an involuntary shudder. And the third animal—well, we all know him.

ALL KINDS OF TURKEY

Here's to—

"Turkey hot,"
Turkey cold,
Turkey in cold storage
Nine months old.

THE REAR BRAKEMAN TALKS

Thanksgivin' Day, when I was young, the schedule was revised;

An' us kids got an order that we certainly despised.

You see, the preacher always come, an' half a dozen more,
An' so they sidetracked all the kids behind the bedroom door.

The meal was run in sections, an' us children had to wait
Until the ol' folks finished, 'fore we got to pull our freight

But talk to me! I tell you now, that each one of us smiled
As soon as mother handed us the orders to run wild;

The turkey an' the dressin' was the homecooked kind, and
rich,

An' when we wanted any more we just began to switch.

We got impatient waitin'—just like any crew—

But we was always mighty glad to take out section two.

We never run no sleepers on the section we took out,

She was made up of diners—an' you ought to heard us shout
When mother brought the pumpkin pie—an inch, too, you

bet—

An' give us all the high sign—Gee! that pie! I taste it yet!

An' when we run old "section two"—I'm tellin' you a fact—

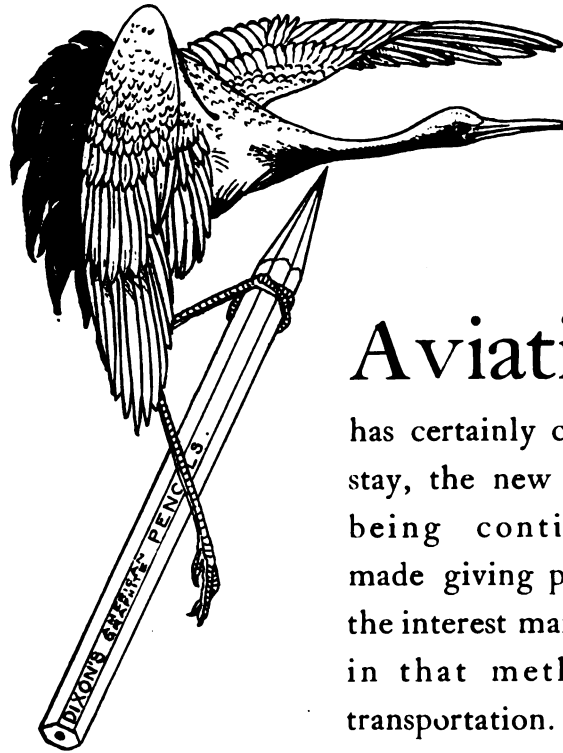
They never called the wreckin' crew to help clear up the
track.

THANKSGIVING approaches with only one Turkey to divide
amongst the hungry European nations.

DESTROYING RATS AND PORCUPINES

We read that a very satisfactory method for exterminating rats or porcupines is by use of carbon bisulphide.

First determine whether the rat holes are inhabited or not. This may be done by stopping all of the visible rat holes with earth. The inhabited hole will be found reopened on the following day. Pour half a teaspoonful of carbon bisulphide into each of the holes and after waiting a few seconds to allow the liquid to evaporate, the mixture of vapor and air may be ignited with a match. The result will be a small explosion which will cause the hole to be filled with poisonous gases, killing all the rats almost instantly. In one case 131 dead rats were found in forty-three holes which were opened after the operation.



Aviation

has certainly come to stay, the new records being continually made giving proof of the interest manifested in that method of transportation.

We only refer to this in a casual way to call your attention to a subject of more real importance and more of a necessity, LEAD PENCILS which interest every man, woman and child in all parts of the civilized world; individually the pencil is a small thing, but the care exercised in its production is almost beyond comprehension and is worth a study.

Care in the selection and preparation of materials from the cedar growth of Florida to the Graphite Mines of Ticonderoga, the capital, intricate machinery, brains and experience denote the final demands of the user.

DIXONS' AMERICAN GRAPHITE PENCILS

are results, and are recommended as suited to the most exacting requirements as to grade, finish and every perfect quality.

All degrees of hardness of leads, hundreds of finishes, styles, shapes to choose from.

We invite your inquiries, or your stationer will supply your needs.

LESSONS FROM ABROAD

What England and Germany have done in the matter of educating boys should be done here.

It should be granted that at school boys should be taught trades and avocations, that they should learn all that can be taught about each, and be able after leaving school to continue and extend their technical education.

Germany has done wonders in this direction and the result is a foreign trade that has brought that country up from almost nothing to an active competitor in most lines, and made it one of the four leading nations of the world in commerce.

Nearly twenty-five years ago the London Chamber of Commerce upon an investigation found that forty per cent. of the clerical force in London offices were foreigners, and that they succeeded because they were better qualified by reason of commercial education and familiarity with continental languages.

The Chamber of Commerce decided to remedy this condition and started by elevating the standard of education by offering scholarships and prizes and creating commercial day and night schools. During the past twenty-five years more than 65,000 students have taken examinations in the commercial courses and over 34,000 were successful. This is only a part of what has been accomplished. Public attention has been directed toward commercial education and in the colleges and universities special courses have been provided and honor students have been sent abroad to perfect their knowledge of foreign languages and learn the commercial customs and usages of the people.

Mr. John A. Walker, late vice president and general manager of the Joseph Dixon Crucible Company, himself a deep student in literature and in commercial life, as well as traveler in foreign countries, was ever ready with voice and pencil to impress on young America the real need of being able to speak more than the English language.

In GRAPHITE for July last, we quoted from *Leslie's Weekly* and the *New York World*, pointing out the seriousness of the matter of foreign trade and the requisition of foreign languages, especially Spanish and Portuguese. The editor of *Leslie's Weekly* showed us very clearly that the merchants of Germany, France and England are reaping the large reward of business success in South America and that American manufacturers have deliberately shut their eyes to the tremendous opportunities to the south of us.

WE ARE in receipt of the following interesting letter from a railroad Y. M. C. A. library, acknowledging receipt of our book, "Crucibles, Their Care and Use," of which we sent bound copies to the various libraries throughout the country:

Please accept our sincere thanks for the book you sent us for our reading table, entitled, "Crucibles, Their Care and Use." It must have been greatly appreciated by someone, for in less than a half day after it was put on our reading table, it was taken by some unknown person and has not reappeared since. We thank you for it just the same and if you will please send us another one, I will catalogue it and lock it in a book-case and charge it out to the men wanting to study it.

Yours very truly,

R. R. Y. M. C. A.,
Secretary.

WHAT GREAT GOOD THE PORKER DOES THE WORLD

One of the newspaper fraternity has lately been cogitating on the usefulness of the hog. He says that the hog may not figure in the popular mind as an inviting subject for a rhapsody, but when you come to consider his economic relations to the concerns of humanity, where will you find another animal with more points in his favor in spite of his bristles and his untidy habits?

No one ever hears of a little pig or a mature hog being "spoiled" because he is the only member of the family. There are always others and plenty of them to share the favors that come to the hog household. It is quite usual for the "family" to number eight or ten and a litter of twelve is not phenomenal.

In the course of time the family carries to market several hundred pounds of the best meat that ever came from the hand of nature.

His real usefulness is by no means limited to his life. His real virtues only begin to shine forth after he is dead. He is good to eat "in any spot or place." From his head to his tail he is a compendium of delicious parts. As the orators say, "Time would fail us to mention them all."

AND NOW THE TOOTHBRUSH

After telling us that there are dangerous microbes and germs in our milk and food and even in our lips and mustaches, so that we no longer dare to kiss or to be kissed, the British Medical Association has been gravely discussing the toothbrush, the members telling each other of the awful things likely to happen to persons using toothbrushes.

The only avenue of escape apparently afforded us is to have a new toothbrush each time we brush our teeth; that where a toothbrush is used for several weeks we are in danger of such grave consequences that even the names of what we may get are unpronounceable and terrifying.

How Do You Figure the Cost of Paint?

So much for material, so much for labor? It costs no more to apply a good material like

DIXON'S SILICA-GRAPHITE PAINT

and you get longer paint protection. Boys can apply paint—but there is no economy in this method. Neither is there economy in a "boy-quality paint"—Dixon's is full grown.

JOSEPH DIXON CRUCIBLE COMPANY
JERSEY CITY, N. J.

MAILING LISTS

The uselessness of many mailing lists is evidenced by the circulars and letters that come into the Dixon office addressed to parties long since dead or who have not been in the employ of the Dixon Company for many years.

The writing of this paragraph is due to our having received a circular letter addressed to Mr. C. W. Brown, who was a salesman and branch manager of the Dixon Company twenty-five to thirty years ago and who has been dead for about twenty years.

Each week circular letters come addressed to our late Vice President and General Manager, Mr. John A. Walker, who passed away four years ago, and to our late President, Mr. E. F. C. Young, who passed away about two years ago.

We made it a rule to advise the senders of these communications of their error. Sometimes we have been thanked and probably more often the sending has been continued.

The use of such incorrect mailing lists is a waste on the part of the senders and a reflection on the bureaus that get out such lists.

DEFENDS BUSINESS MEN

"Victims of Imperfect Standard," Says Dr. Luther, President of Trinity College

"We read," said Dr. Luther, "and hear much today of evil, grasping selfishness in the business world. Men are held up by name to the scorn and derision of the reading and listening world. Their methods of business are denounced in many quarters as of devilish origin and of fatal effect. There is something in all this, but the curious thing is that these men, whose names I suppose occur to you as I am speaking, when you come to meet them are honest, straight, upright, loving fathers, faithful husbands, Christian gentlemen, charitable, lovers of men and lovers of God.

"There is something pitiful in the genuine surprise with which, in the last few years, Christian gentlemen of the sort which I have described, discovered that the things which they have been doing are regarded by the world as evil. I do not believe that these men are sinners above other men. They are the victims of the imperfect standard which has been placed in their hands.

"I believe that there is very great danger in the indiscriminate attack upon men who have quite innocently worked themselves into an unhappy relation to their fellow men."

BEN FRANKLIN and Horace Greeley were the greatest members of our craft—who now rest from their labors in America. The third greatest—and the greatest master printer America has produced—is still with us, and "may he long be so" is the wish of all true lovers of our craft. For those who need a chart we will add the honored name—Theodore L. De Vinne.—*The Printing Trade News*.

Theodore L. De Vinne and the Joseph Dixon Crucible Company have been in close touch for far over a quarter of a century.

So absolutely safe may one feel in the hand of the De Vinne Press that there is no need to ask a price. One may feel certain of the class of work that the price will be right.

Some years ago we sent 10,000 pamphlets to a concern to have sample cards of graphite paint inserted. The concern

asked us the name of our printer, adding that it was the first time they had ever found full count, as most printers considered 480 sheets (a ream) as 500 sheets. Not only was there 10,000 pamphlets but there were some over. There is great satisfaction in doing business with a fair count house like the De Vinne Press.

If it is a fact, as we are told it is by some of our would-be competitors, that all natural graphite contains a high percentage of impurities harmful to bearings, etc., and that the constant use of natural graphite and its associated impurities will not be advantageous, we wonder how it is that so many of the best known scientific mechanical engineers and the thousands upon thousands of careful and observing engineers in general and expert mechanics have given their unqualified endorsement to Dixon's Flake Graphite and have said time and again in print and letter and to friends, that the advent of Dixon's Flake Graphite into the mechanical world made possible satisfactory lubrication of the tremendously heavy motors and machines that are now in use and on which oil alone would have failed, except when used in most uneconomical quantities.

It reminds us of the small boy who, after being thoroughly walloped one day by a neighboring boy, said: "Well, if I cannot lick you, I can make faces at your sister."

THE LOST HANDLE

A Story in two Chapters with the Name of the Author Omitted, but it is a Copy of a Genuine Letter Written to a Dealer who sends it to us

MEESTER

Dear frend i get the valve wieth i by from you alrite but why for gods sake you doan sen me no handle wats the use of the valve when she doan have no handle i loose to me my customer sure ting. you doan treet me rite is my money not so good to you as the other fellow i wate 10 daze and my customer he holler for water like hell by the vale you no he is hot summer now and the win no blow the meel the valve she got no handle so what the hell i goan do you doan sen me handle preety quick i sen her back and i goan order some valve from K-Copanee good-by

your frend

since i write these letter i fine the goddam handle in the bocks eccuse to me.

FISHING IN PALESTINE

One of Private John Allen's favorite stories is about a Georgia bishop.

One of the members of the bishop's church met the reverend gentleman one Sunday afternoon and was horrified to find the bishop carrying a shotgun.

"My dear bishop," he protested, "I am shocked to find you out shooting on Sunday. The Apostles did not go shooting on Sunday."

"No," replied the bishop, "they did not. The shooting was very bad in Palestine and they went fishing instead."

—*Cleveland Leader*.



A Dixon Pencil for Every Purpose

There is a Dixon Pencil of the right sort for every desk in your office, and for every purpose—with full measure of quality to the very last inch. We know about the materials, from start to finish. Added to this is the watchful care used in combining these materials to get the smoothest writing pencils possible.

DIXON'S AMERICAN GRAPHITE PENCILS

are made in many degrees of hardness or softness, and in several qualities. Some people want a pennypencil and some are willing to pay more and get quality. There is no pencil on earth that surpasses a Dixon pencil—and its equal is hard to find. Dixon pencils make good and stand up under hard trials. The lead inside the cedar case is not broken in making—it doesn't fall out when you sharpen your pencil; it doesn't smudge nor smut—it makes its mark cleanly, surely and without a trace of grittiness. Truly *good* pencils and the kind you'd stick to if you tried them once.

The illustration in this advertisement was made with a Dixon Pencil.

Your dealer sells them or *will* sell them if you ask him. Our booklet—"Dixon's Guide for Pencil Users" tells you the sort to use for any purpose. Send for it *now*.

JOSEPH DIXON CRUCIBLE COMPANY
Jersey City, New Jersey

GRAPHITE

VOL. XIII.

DECEMBER, 1911.

No. 12.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

KEEPING CHRISTMAS

It is a good thing to observe Christmas day. The mere marking of times and seasons when men agree to stop work and make merry together is a wise and wholesome custom. It helps one to feel the supremacy of the common life over the individual life. It reminds a man to set his own little watch, now and then, by the great clock of humanity.

But there is a better thing than the observance of Christmas day, and that is, keeping Christmas.

Are you willing to forget what you have done for other people and to remember what other people have done for you; to ignore what the world owes you and to think what you owe the world; to put your rights in the background and your duties in the middle

distance and your chances to do a little more than your duty in the foreground; to see that your fellow men are just as real as you are and try to look behind their faces to their hearts, hungry for joy; to own that probably the only good reason for your existence is not what you are going to get out of life, but what you are going to give to life; to close your book of complaints against the management of the universe and look around you for a place where you can sow a few seeds of happiness—are you willing to do these things even for a day? Then you can keep Christmas.

Are you willing to stoop down and consider the needs and the desires of little children; to remember the weakness and loneliness of people who are growing old; to stop asking how much your friends love you and ask yourself whether you love them enough; to bear in mind the things that other people have to bear on their hearts; to try to understand what those who live in the same house with you really want, without waiting for them to tell you; to trim your lamp so that it will give more light and less smoke and to carry it in front so that your shadow will fall behind you; to make a grave for your ugly thoughts and a garden for your kindly feelings, with the gate open—are you willing to do these things even for a day? Then you can keep Christmas.

Are you willing to believe that love is the strongest thing in the world—stronger than hate, stronger than evil, stronger than death—and that the blessed life which began in Bethle-

hem over nineteen hundred years ago is the image and brightness of the Eternal Love? Then you can keep Christmas.

And if you keep it for a day, why not always?

But you can never keep it alone.—HENRY VAN DYKE in *Youth's Companion*.

LOSS OF HEAT BY PAINTING RADIATORS

It is generally believed that there is a great loss in efficiency from painting radiators. We do not agree with this opinion, however, and it has long been our custom to require piping and radiators to be painted in colors appropriate to the finish of the rooms in which they are placed. Professor C. L. Norton, of Boston, Mass., made a long series of experiments upon the transmission of heat through and from painted surfaces. His results are highly interesting, and are recorded in the nineteenth volume (1898) of the *Transactions of the American Society of Mechanical Engineers*. They have seemingly never attracted the attention they deserve. Taking the amount of heat radiated from a new pipe as 100, Professor Norton obtains the following relative values for the heat radiated, under similar conditions, from pipe treated as indicated:

LOSS OF HEAT AT 200 POUNDS PRESSURE FROM BAR PIPE

New pipe,	100
Fair condition,	116
Rusty and black,	119
Cleaned with caustic potash, inside and out	116
Painted dull white,	120
Painted glossy white,	100.5
Cleaned with potash again,	116
Coated with cylinder oil,	116
Painted dull black,	120
Painted glossy black,	101

It appears from the foregoing results that the color of the pipe has little or no effect upon the radiation of heat, though the condition of the surface with respect to glossiness or dullness has quite a sensible influence. Thus a dull surface, whether it be white or black, has a radiative power of 120, and a glossy surface, whether white or black, has a corresponding power of only about 101. These results accord well with our experience, which is to the effect that there is no loss in efficiency through making pipes and radiators harmonize with the general color scheme of the rooms in which they occur, provided gloss finishes are avoided.—*The Locomotive*.

DIXON'S graphite publications sent free upon request.

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

President—GEORGE T. SMITH
Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
Ass't Treas. & Ass't Sec'y—J. H. SCHERMERHORN

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GEORGE T. SMITH	WILLIAM H. CORBIN
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WILLIAM MURRAY	HARRY DAILEY
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OFFICES AND SALESROOMS:

NEW YORK SALESROOM, 68 Reade Street.
 PHILADELPHIA SALESROOM, 1020 Arch Street.
 SAN FRANCISCO SALESROOM, 145 Second Street.
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 BOSTON OFFICE, 648 John Hancock Building.
 PITTSBURG OFFICE, Wabash Terminal Building.
 ST. LOUIS OFFICE, 501 Victoria Building.
 WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
 BALTIMORE OFFICE, 1005 Union Trust Building.
 BUFFALO OFFICE, 72 Erie County Savings Bank Building.
 ATLANTA OFFICE, Fourth National Bank Building.

EUROPEAN AGENTS

Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

OUR GREETING

It is said to be good and profitable to the soul's health to interchange sentiments of good will, particularly at this time of the year and especially toward those for whom a sincere regard is held; therefore, we wish health and happiness and all the compliments of this beautiful season to the readers of GRAPHITE and to all who have favored the Dixon Company with their most acceptable orders for graphite products. We are not alone pleased that we have given our customers full value for their money, but we are pleased to note that they in turn appreciate the quality and value of the Dixon products.

DIXON'S graphite publications sent free on request.

SAME OLD THING

Same old Christmas!
 Same old jokes,
 Same old slippers,
 Same old smokes,
 Same old swaying
 Mistletoe,
 Same old kisses—
 Same old "Oh!"
 Same old shoppers,
 Same old rush,
 Same old egg-nogg,
 Same old lush,
 Same old stockings,
 Same old tree,
 Same old Santa,
 Same old glee,
 Same old pictures,
 Same old verse,
 Same old pipe racks—
 Only worse!
 Same old neckties,
 Same old dolls,
 Same old candy,
 Same old balls,
 Same old dinner,
 Same old cards,
 Same old gifts from
 Same old pards—
 Merry Christmas!
 Glad! Aren't you?
 It's the same thing,
 Old, yet new!—*Life*.

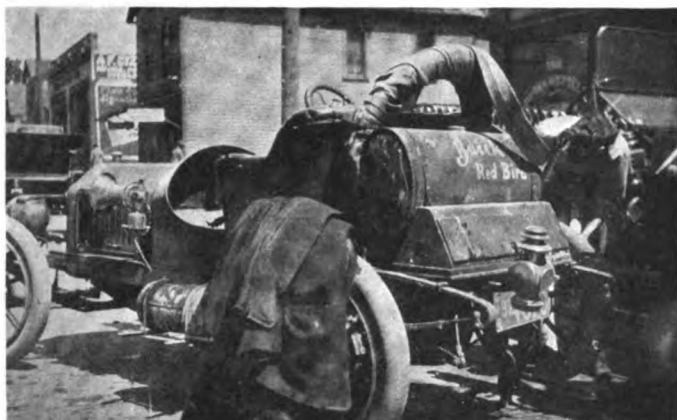
OUR attention has been called by a jeweler to the fact that Dixon's Circular Eraser No. 899 can be used for a new purpose. He has been using these erasers on a burnishing wheel and claims that he can polish silver much better than he can with a brush. In other words, the circular erasers being pointed and round, can polish corners and engraved work much better than a brush. It may be well to remember this in the sale of the circular eraser.

THE following is in answer to a circular letter sent out by our Crucible Department:

"Your circular letter of the 13th, addressed to Mr. M. T. Blank, has been delivered to us, and in reply will say I do not know whether Mr. Blank is interested in crucibles for melting steel or not. He was killed in an automobile accident some five or six years ago, and we have not present address, therefore cannot forward mail."

"THERE'S A REMEDY"

"I have mislaid my fountain pen" said the father.
 "I guess mother found it," said the daughter.
 "What makes you think so, daughter?"
 "Because I heard her say she'd been doing nothing but washing her hands all day."—*Yonkers Statesman*.



FLATTERING TESTIMONIAL

It is with a great deal of pleasure that we reproduce the following letter from Mr. R. S. Wilson, driver of the Buick Red Bird.

PORTLAND, OREGON, Sept. 23, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

DEAR SIR:—In my entire season's running of road records for 1911, I have used Dixon's Graphite Lubricants exclusively on the Buick Red Bird and feel satisfied that great credit is due Dixon's lubricants, in that I have succeeded in lowering records in everything entered. After several thousand miles of travel we find all the gears and bearings in perfect condition, showing no wear even with the strenuous tests gone through.

Am so thoroughly satisfied with Dixon's Lubricants I will surely use them on all cars and recommend them to all who have use for the best of lubricants.

Yours very truly,

R. S. WILSON.

In one run of seven hours and fifty-nine minutes, 170-7/10 miles were driven; the last sixty-one miles in eighty-seven minutes. The time includes three ferriages, the last one of which consumed forty-two minutes. There was slight tire trouble, but no lubricating trouble. The car was driven by R. S. Wilson and L. Therkelson and was the winner of the Chanslor and Lyon Trophy.

The photographs were taken in Tacoma, Washington.



The Printing Trade News expresses our own idea when it says that what we want at times is an alarm clock that will not only wake us up, but will make us feel like getting up.

THE VALUE OF LOYALTY

He who leaves loyalty out of his estimate of other men succeeds only at stupendous cost. Whether they be your colleagues, patrons, employes or employers, you need the good will and moral support of the men with whom you come in contact. You must have their loyalty, and to beget loyalty you must give loyalty. He who does not believe in it cannot give it, for it does not exist in him. Moreover, he may give fair service, honest value and adequate wages, but neither colleague, patron, employe or employer will fight his battles until he possesses and proves a knowledge of the fact that there is more in the ordinary affairs of life than a cold-blooded game of give and take. So says a writer in a clipping from a newspaper which is sent to the editor of GRAPHITE, marked "Good for GRAPHITE," but omitting the name of the paper from whence the clipping is taken.

"COST BY THE PEACE"

Our Atlanta office, suddenly realizing their neglect in the way of contributions to the editor, rests from business cares long enough to hand us endorsement No. 1,633,430. The letter, which is here reproduced verbatim, is from an enthusiastic user of Dixon's Lumber Crayons:

Joseph Dixon Crucible Company.

DEAR SIR:—I will write you all a few lines in regard of some crayons a friend of myin gave me a stick of yours blue crayon

I wish you all would send me a price of your blue and red and green crayons and send me a sample of your red and blue and green if you don't mind it. And be sure and send me a price list of the crayons tell me how mutch the cost by the peace and how mutch they cost by the dozen. I need these crayons very bad. Send reply at once so i can send any order in at once I work in a wood Shop and I have a heep of marking to do and I have used a good many of Crayons but i am glad to say your all is the best marking Crayon I every marked With please send samples at once if you all have in to send for samples If you all havent the samples it will be all right and be sure and send me the price list at once. I will try and get some of the other boys to order from you all I Will be agent if you all wish to have one Please ans at once

Yours truly,

We have known many serious things to occur for lack of a Dixon pencil and no doubt our correspondent's irritation has shown itself in the form of a reckless disregard of our mother tongue. His words are nevertheless welcome, voicing as they do, the general opinion of those who use Dixon's Lumber Crayons.

IN THE headquarters of the Joseph Dixon Crucible Company at the National Educational Association Convention held at Los Angeles, California, during the past summer, a visiting teacher who was admiring a crayon sketch of a young lady which was made with the Dixon Crayons said, "and was this work really turned out with the Dixon Crayon? What beautiful red cheeks they make."

To which the attendant replied:

"Yes, madam, but we can't recommend them for that purpose."



THE HOME OF A POPULAR SUPPLY HOUSE IN SEATTLE, WASH.
On the left is an interesting arrangement of Dixon's Graphite Motor Lubricants

FOREIGN MARKETS

Of foreign competitors in the Spanish market, the Germans are said to be by far the most aggressive and hold a larger part of the trade owing to their thorough study of the commercial requirements of the country. They understand and cater to every Spanish peculiarity, and in many cases even take the business from local manufacturers. It is said, however, that when goods are desired in which quality has to be considered more than price, the Spanish merchants invariably look to Great Britain, France or the United States.

*Joseph Dixon Crucible Company,
Jersey City, N. J.*

GENTLEMEN:—I want to express my appreciation of the important part played by your graphite in my recent motor trip to the Pacific Coast. The question of lubrication is all important with the ordinary tourist. On such a trip as ours it was the *vital* question. Bearing this in mind, we equipped ourselves liberally with Dixon's Motor Graphite and thanks to our foresight here, we had no lubrication troubles, even during our long runs through the desert.

Yours very truly,
(Signed) A. L. WESTGARD.

AN UNHAPPY, mad and generally disgusted editor of a great daily, speaks his mind freely and forcefully:

"The common method of inscribing words upon paper for the transmission or preservation of facts and ideas is a disgrace to modern civilization. Century after century has passed away without any radical improvement in the clumsy, wasteful, uncleanly and often exasperating process.

"The mechanism and the medium are practically the same as they have been from the dim dawn of history. The form of the stylus or steel pen changes, and the pigment and its vehicle vary, but this otherwise enlightened and lucky generation

is as much the slave and the victim of the inkpot, with its nasty contents, as was the mediæval monk, the Roman or the Greek, the Egyptian under the First Dynasty, or the Chinaman of the time of Tien-Hwang the Celestial.

"Now, this is ridiculous. The more closely you consider the circumstance the more stupefying it becomes. How many million lifetime-units of muscular and nervous energy have been expended unnecessarily in the mere act of stretching the hand over to the inkstand to dip the pen in this black liquid relic of primeval barbarism? How many precious souls have been sent to perdition in consequence of the emotional upheaval over the besmeared fingers, the blot on the fair page or parchment, the ink bottle upset by the office cat?

"The ideal substitute for writing ink and the steel pen would be a pencil of solid substance which should mark by abrasion, like the ordinary graphite pencil, preserving a point not in need of frequent sharpening, running smoothly over the surface of paper, and leaving a line chemically permanent and of satisfactory blackness. No fountain pen need apply.

"No wonder Martin Luther hurled his inkpot at the Devil. That utensil fairly belongs to Sheol."

For permanency use Dixon's American Graphite Pencil—a mark made by graphite is permanent. For convenience use Dixon's Indelible—it is ink or pencil, as you wish.

A PLAUSIBLE DEDUCTION

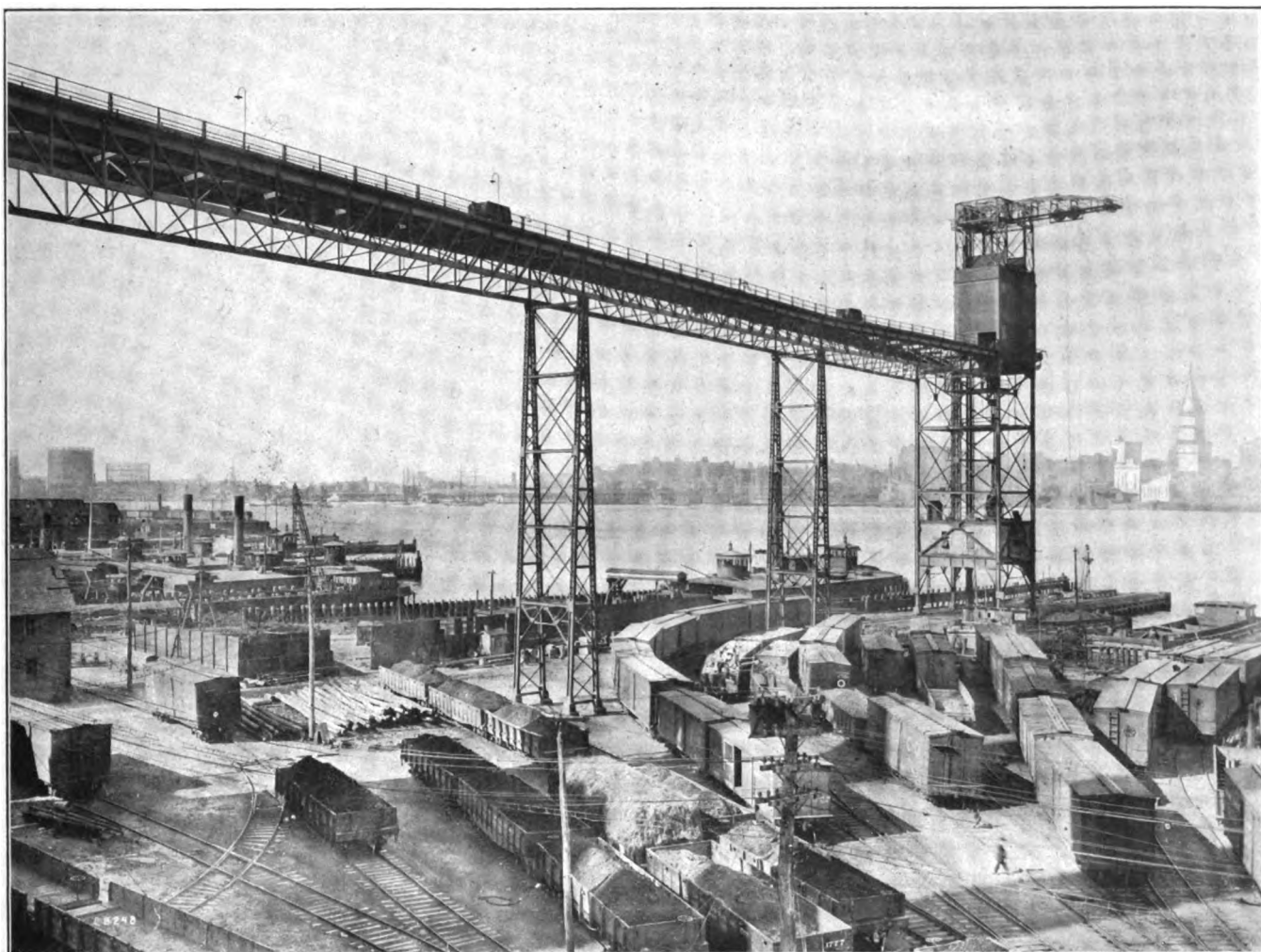
A Baltimore school teacher had encountered such a degree of ignorance on the part of one of her boys in relation to the recorded acts of the Father of his Country, that she grew sarcastic, with a result which *Shipping Illustrated* records.

"I wonder," she began, "if you could tell me whether George Washington was a sailor or a soldier?"

The boy grinned. "He was a soldier, all right," he said.

"How do you know?" the teacher challenged.

"Because I saw a picture of him crossing the Delaware. Any sailor would know enough not to stand up in the boat."



LONG ISLAND CITY POWER STATION'S COAL HANDLING PLANT

The illustration on this page affords an excellent conception of the great coal handling facilities of the Long Island City Power Station. The location of this station permits of receiving coal by both water and rail, though its equipment is more particularly designed for receiving water coal. Because of certain interesting features we give here a short description of its coaling methods.

A high, level cable railway runs from the coal hoisting tower on the dock into and through the top of the boiler-house, over the coal pocket, at an elevation of 170 feet above the dock level. This cable railway is in the form of a loop, and is operated by an endless cable, motion being imparted to the cars by means of a simple form of cable grip. After a single hoisting operation, the coal is passed along to its destination in the pocket by transportation in cars along the level cable railway. The hoisting tower is of the "one-man" type, having capacity for 400 long tons of run-of-mine bituminous coal in five working hours. In general, the apparatus is a simple application of heavy, rugged, steam hoisting engines of standard type, with an arrangement of ropes, sheaves, and counterweights similar to that in satisfactory use for years past in the best steam elevator practice. The coal is hoisted in a two-ton bucket of the "clam-shell" type, with heavy renewable steel cutting blades. The receiving hopper is built of steel plate, and the coal passes through it

by gravity on to the shaking bottom, which allows certain small coal to pass around the crusher to the loading hopper, and delivers the large coal to the crusher. The shaking grate and the crusher are operated by the same engine.

The cable railway is designed for handling 150 tons per hour, when operating twenty-nine two ton cars at a speed of 180 feet per minute around a track loop approximately 2,500 feet long. The cable is $\frac{3}{4}$ inch six-strand wire rope. The engine driving the cable is under manual control and, together with the crusher engine, is in a little engine room on the same level and adjacent to the scales, so that the entire mechanical output of this part of the plant is controlled by one man. These engines can be shut down automatically if the cars are not properly released from the cable just before reaching the loading platform on the return journey, where the cable leaves the roadway in order to come over the winding drum.

It is believed that the actual cost, including labor, supplies and fixed charges per ton of coal, from the time it leaves the barge until it arrives in the bin, on the basis of 480 tons per day, represents the greatest economy yet obtained by any plant intended to accomplish the same purpose under similar general conditions.

The well-known New York firm of contracting painters, the Vassilaros Contracting Company, located in the New York Tribune Building, applied two coats of Dixon's Silica-Graphite Paint on the above steel structure, using Dixon's Dark Red for the shop coat, and Dixon's Olive Green for finishing coat.

D X N



A.E. SCHMIDT 1906



O. STEELE 1906



W.B. ALLEN



W.F. MOORE 1909



F.R. BRANDON 1903



D.A. JOHNSON 1897



SAM MA



H.C. SORESEN 1909



C.P. MUELLER 1899

CHIC
SALES
JOSEPH
CRUCIBLE

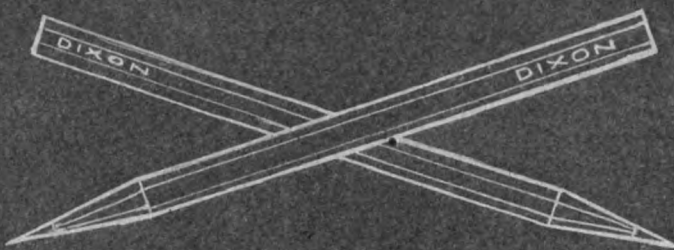
D X N



LEN 1896



C.A. ORTH 1906



H.M. JOHNSON 1907



YER 1897



E.A. ST. JOHN 1898



E.R. SMITH 1904



J.M. FEIPEL 1908



D.M. HOWE 1900
PITTSBURGH



R.F. GODWIN 1910

CHICAGO
FORCE
DIXON
COMPANY



THE JOSEPH DIXON CRUCIBLE CO'S SALES FORCE FROM THE CHICAGO DISTRICT

For almost fifteen years it has been the constant and untiring work of Sam Mayer to build a bigger and better business for the Joseph Dixon Crucible Company. With headquarters located in Chicago, he has thoroughly extended his work throughout the vast territory which looks upon that great city as its natural commercial center and base of supplies.

To many of our readers Sam Mayer needs no introduction. His picture has appeared more than once in GRAPHITE, and one Chicago enthusiast who, by the way, is one who "knows and knows he knows," has said that Sam Mayer is probably the best advertised pencil man in the West, if not in the entire country. To this it is *our* privilege to add that his estimate is only in accordance with that well-known advertising principle, "only the best products may be successfully advertised."

We are, nevertheless, proud to have reproduced in this issue of GRAPHITE, not only the likeness of Sam Mayer, but also the men who are helping him to greater efforts. Some there are among these fifteen "live wires" who have been, more than others, largely instrumental in the past development of Mr. Mayer's work and the success of the Joseph Dixon Crucible Company, but all deserve a greater credit for that which they are doing to-day.

In a back number of GRAPHITE one may read of the early struggles and indomitable perseverance of Mr. Dudley A. Johnson to collect from an unsympathetic world the compensation it is said to owe each individual. As one reads this tabloid history and compares Mr. Johnson's youthful career to his present state of comparative affluence, the question naturally arises as to how he accomplished so great a transformation. The answer is apparent to those who have come in contact with "Dud" during the past fourteen years, for all recognize in him the spirit of hard work and energy. His chief interest is centered upon crucibles; and this recalls to mind that the introduction to the bicycle trade of liquid brazing is largely due to his untiring efforts. He interviewed the furnace maker and the bicycle manufacturer, and furnished the Dixon Company with data so that proper brazing crucibles were made without difficulty. He then interested the publishers of the bicycle trade papers and the liquid brazing process was given to the world, and is in use wherever bicycles are manufactured.

Mr. W. B. Allen, familiarly known to his many friends and admirers as "Old Billy Allen" (though his picture disproves this imputation) enjoys an unusual amount of popularity, and among the trade none are more welcome than this great knight of the grip. His long connection with the Joseph Dixon Crucible Company has endeared him to all the many Dixonites who have the pleasure of his intimate acquaintance. "And when we work, we work with Billy, for Billy knows just where to sell!"

Mr. Edmond A. St. John has been described as a keen, shrewd, far-sighted man, possessing an excellent memory and a fluency of speech which carries all before him. However well developed he may have the first four qualities, no one disputes his magnificent ability to express his thoughts in clear, forceful language. "Some Thoughts About Pencils,"


is an excellent illustration of his imaginative way of describing what to many others would be a prosaic subject. He is genial, sympathetic, sociable, and perhaps the greatest of all his talents to aid him in the finer art of salesmanship, is his adaptability to men and circumstances.

In no similar period during its long existence has the superior quality of Dixon's Silica-Graphite Paint become more widely recognized and the product itself more generally used than during the past decade. Among the salesmen who have figured prominently in this increased activity are a few who deserve the highest credit, but none more than Mr. D. M. Howe. Mr. Howe, whose office is located in Pittsburg, confines his attention to that center of the great steel industry, and has been the chief factor in having many of the great achievements in steel protected with Dixon's Silica-Graphite Paint.

No other department of the Chicago office is more ably handled than its school interests; and the man whose efficient methods are steadily pushing this important department to the front is Mr. Horace M. Johnson. Mr. Johnson seems to be peculiarly adapted to the work he is doing, and some day we may learn that Dixon's American Graphite Pencils are the only ones a Chicago school boy will want to use.

The Chicago offices of the Joseph Dixon Crucible Company occupy a large section on one side of the Monadnock Building, and in a business-like way are beautifully decorated with a myriad of Dixon posters, cards, hangers and other attractive specimens of the printer's and lithographer's art. Indeed, this hustling place might well be likened to a miniature commercial art gallery, if one judged from the remarks of approval that often come from many daily visitors. (See illustration on pages 2374 and 2375.)

DIXON'S graphite publications sent free upon request.

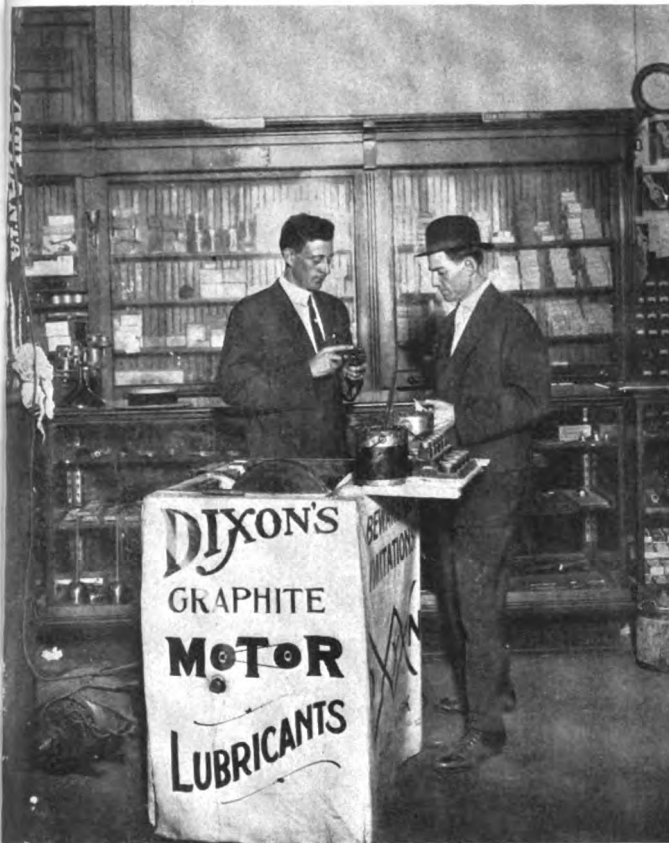


Not only is a sharp, clean line produced easily and smoothly; but it is quickly and cleanly *erased* when you use

DIXON'S
AMERICAN GRAPHITE
PENCILS

Made by American labor from American materials—chock full of Dixon quality.

JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.
Send for Dixon's Pencil Guide—gratis



MURRELL, THE GREASER

Under the management of Mr. Lewis, a unique and successful campaign is being conducted for Dixon's Graphite Motor Lubricants. Mr. Lewis' novel method of salesmanship is awakening a dormant trade, securing the enthusiastic co-operation of supply houses and is succeeding in arousing widespread interest in Dixon's Graphite Motor Lubricants among automobile owners throughout the south.

Personal introduction is the keynote of Mr. Lewis' operations and in selecting Mr. C. H. Murrell to carry out his plans, he obtained a man with just the right spirit and necessary experience. Mr. Murrell, who has become more familiarly known as "Murrell the Greaser," is demonstrating to car owners the great mistake of thinking that all lubricants are alike.

Mr. Murrell's work is to visit some selected place in each town on a pre-arranged route and to there give a practical demonstration to all comers of the value of Dixon's Graphite Motor Lubricants. To aid him in this work he uses his celebrated clock sign and transmission box. The former is a huge attractive sign on which appears the face and hands of a clock, and opposite each hour mark some one of the many good reasons why autoists find positive satisfaction in using Dixon's Graphite Motor Lubricants. The transmission serves as a practical and convincing demonstration to the many interested persons who visit Mr. Murrell's exhibitions, for Dixon's Graphite Motor Lubricants are given a most severe test and their superior merit actually shown.

Mr. Murrell uses a business card characteristic of his bright and alert way of doing business and we reproduce herewith the acrostic printed on the reverse side of his card:



QUITCHERKICKIN

Don't worry about grinding and friction,
Instant relief is here.

Excuses or contradiction
On record must disappear.

No screech, no grind, no worry,
So wear the happy smile.

Get over the road in a hurry,
Run slick o'er every mile.
All pleasure depends on protection,
Put her in high, let her go,
Hit her up hard, no objection.
In high, intermediate or low,
The motor's worst enemy is friction,
Each car comes in for its share.

Get rid of this well known prediction,
Ride where others would not dare.
Each, cars, motor and gears need protection,
All grinding and friction will increase,
So secure the pink of perfection,
End it all with Dixon's Graphite Grease.

By MURRELL, *The Greaser*.

The accompanying half tone illustrations are reproduced from photographs taken in the large and progressive Atlanta supply house of Alexander, Seewald Co., active promoters of automobile interests of the South.

Mr. Murrell's work is proving to be most profitable, and our Atlanta Branch has shown a surprising increase in sales of Dixon's Graphite Motor Lubricants—all of which shows that the automobile owner, contrary to the belief of some, takes a personal interest in securing for his car that which prolongs its life and makes motoring a real pleasure.

(THE September, 1911, issue of *Practical Engineer* is of much interest, treating on the subject of lubrication extensively for various types of machines. The following appeared under the headings "Flake Graphite as a Lubricant"—"Using Graphite.")

FLAKE GRAPHITE AS A LUBRICANT

Dean Goss' Opinion as to Its Effect

Flake graphite is of much interest to those who are seeking an answer to the lubricating question. Graphite is not a competing factor with oils and greases, but rather stimulates their lubricating value and its judicious use permits a less viscous lubricant being used, and this in itself is of much importance.

Graphite exists in both the amorphous and the flake form. The flake form of the thin, unctuous Ticonderoga variety is superior for lubricating purposes and there is always danger in using material which happens to be labelled "graphite," as there is as much difference in available lubricating qualities of various grades of graphite as there is in the different grades of lubricating oils.

No matter how well the bearing surfaces may be polished, examination under a microscope will show them like a relief map or nutmeg grater. It is the high spots interlocking or rubbing over each other, and their gradual breaking down that cause friction and its accompanying wear. Thin flake graphite, which settles readily in oil, attaches itself to the high spots where the flakes become pinned or fastened. Soon a tough, thin, veneer-like coating of the highest possible degree of smoothness is woven together, and instead of having metal-to-metal contact, when the oil film for any reason is broken, there is a graphite-to-graphite contact.

Scientific tests have proven that even with ball bearings friction losses are greatly reduced and the load carrying capacity very greatly increased when the correct proportion of flake graphite is used. In this connection Professor Goss, Dean of the College of Engineering, University of Illinois, says in part:

"A combination of graphite and lard oil makes up a lubricating mixture which, when applied to ball bearings, will accomplish everything which lard oil alone will do and which at the same time will give a lower frictional resistance of the bearing and permit a large increase in the load which it may be made to carry.

"An oil as light as kerosene, when intermixed with graphite, will be converted into an effective lubricant for ball bearings when operated under light or medium heavy pressure.

"Even so viscous a lubricant as vaseline will better perform a given service in the lubrication of ball bearings when supplemented by small amounts of graphite. The bearing to which the mixture is applied will work with less frictional resistance and will carry a heavier load than when vaseline alone is used.

"The admixture of graphite with either a liquid or viscous lubricant serves both to reduce the friction and to increase the possible load which a bearing thus lubricated can be made to carry."

The Joseph Dixon Crucible Company, which has closely followed the subject of graphite lubrication since its earliest conception, advises that best results are obtained by using flake graphite regularly in small quantities rather than by occasional applications. One should not wait until a bearing becomes

hot and then throw in graphite until normal conditions are restored; if graphite were used at all times, hot boxes would be unknown and much time and valuable machinery saved.

There are upon the market a number of excellent devices for continuously feeding graphite or graphite and oil to journals or cylinders, by the use of which perfect lubrication is assured. If for any reason the lubricating system should fail, the parts will run for a long time without seizing and scoring, because of the graphite present on the metal surface. In addition, graphite permits the use of considerably less oil or of a cheaper oil, either of which is an economy.

The Joseph Dixon Crucible Company prepares standard flake graphite in a number of degrees of pulverization, so that some grade is adaptable to any requirement. It also offers a large number of special graphite greases.

USING GRAPHITE

Proportions to Mix With Lubricants to Cut Down Your Oil Consumption

As explained at the outset, the use of graphite is to fill inequalities of surface, and only enough is needed to keep these inequalities filled. Dean Goss, in a report on experiments made at Purdue University, says that:

"By the presence of the graphite there is substituted for the frictional contact of the metals themselves, the frictional contact of two surfaces of compressed graphite, the frictional resistance of which is much less than that of the metal surfaces themselves. The evidence is that there is little or no movement between the graphitic surfaces, and there seems to be no train of individual particles the presence of which, if they existed, could be looked upon as the equivalent of the oil-film. Such dust-like particles may at times occur, but they do not long persist and their presence probably operates to increase, rather than to diminish the friction attending any motion of the parts.

"The best results with graphite are obtained when the graphitic coatings on journal and bearing are rubbed down to a fine, hard, well glazed finish. Two such surfaces are capable of being worked upon each other with a freedom of friction not equaled by that of any other solid material.

"A review of many different examples shows that wherever metallic surfaces have sliding contact under very light pressure, graphite alone may be accepted as a sufficient lubricant, and as altogether the most desirable one available.

"The action of graphite supplied to a bearing with oil or grease is in every way similar to that of graphite supplied alone. Once between the rubbing surfaces, it seeks to identify itself with the metal of the bearing; to fill the pores of the metal; to build up low places; and to give to the surfaces in contact a superficial finish that cannot otherwise be had.

"By the use of graphite, water (under favorable conditions) may serve as a sufficient lubricant. It is entirely logical to assume that the preparation of the surfaces of a bearing may be so complete that not only limpid oils, but even water, may suffice for their lubrication. Confirmation of this comes from the engine room where, in the cylinders of steam engines, graphite has come to be extensively employed unmixed with other lubricants.

"In this service, the currents of steam and films of moisture which extend themselves over the rubbing surfaces, serve as a

sufficient vehicle for carrying the flake graphite forward and for distributing it over the surfaces to be lubricated, and the water of condensation serves as the intervening film with results which are as important as they have been satisfactory.

"Engines which have required large quantities of cylinder oil are now running on small quantities of graphite. Engines having valve seats and bore of cylinder cut, and which were going on from bad to worse in spite of the liberal use of high grade cylinder oils, are reported as giving no trouble and as having begun to improve as soon as flake graphite was substituted for the oil. Even in the cylinders of air compressors there is sufficient moisture to constitute the intervening film when the surfaces of the cylinders and pistons have been perfected by the presence of the graphite."

Tests made to determine the effect of mixing graphite with sperm oil showed on runs lasting from 60 to 110 min. and with 200 lbs. per square inch pressure, that up to four per cent of graphite the co-efficient of friction was lessened, and above that per cent it increased.

In tests using graphite and a mixture of graphite and water the co-efficient of friction for graphite alone averaged 19.7, and with the mixture, really a thick paste, 14.5 per cent, proving that the addition of a small amount of water was beneficial.

For compressed air cylinders the mixture of graphite with oil or with soapsuds has been found valuable. One maker of compressors recommends one tablespoonful of graphite to one quart of compressor oil and the use of $\frac{1}{3}$ pint of the mixture every twenty-four hours for a cylinder sixteen by eighteen inches. The same proportion of graphite may be fed separately by admitting it with the air through the air inlet.

For rock drills, a teaspoonful of graphite to a pint of oil is advised, used in a regular oil can, and the oil can being well shaken before each application.

GRAPHITE FOR DELICATE MECHANISMS

We are receiving from railway signal departments wonderfully satisfactory reports in regard to the use of Dixon's Lubricating Graphite No. 635.

Careful tests that have been made by experts demonstrate that roller bearings are greatly improved when Dixon's Dry Graphite No. 635 is used.

On one large railroad the signal department has recommended the following practice:

"Remove the bearing, wash it thoroughly in gasoline, also cleanse with gasoline all the parts in which the roller bearings work. Remove all rust from any parts that may be rusted, drying thoroughly all parts, then dip a piece of chamois cloth or canvas in dry graphite and rub this on the bearings and other parts requiring lubrication until the entire surfaces are given a glossy coat. If there is any evidence of pitting on the bearings or parts, rub these parts with the graphite until they are perfectly smooth. Before placing the spindle and bearing back into the case, thoroughly revolve the spindle in its bearings, being sure that the parts are well lubricated and free from loose graphite. Plug the oil holes to prevent foreign substances getting into the bearing.

USE NO OIL WITH THE GRAPHITE

These bearings should be lubricated in this fashion once in three months."

The above is in line with the practice recommended by the Air Brake Association who recommend that the triple valve shall be lubricated with the best grade of graphite alone (Dixon's Air Brake Graphite has the sanction of prominent air brake men). After careful and extensive tests, the railroad companies have adopted the use of dry graphite alone for lubricating parts which are most delicate and upon the positive working of which depends human lives, and to meet the severe requirements and positively lubricating these delicate mechanisms, the Dixon products have been found most efficient.

LIKE MOTHER MADE

By JOE CONE

You can talk about your Christmas in the gay and festive town,

With its crowds of Christmas strollers promenading up and down;

With its lavish decorations, and its music sung and played,
But the Christmas to my notion was the kind that mother made.

As to mother's bread and doughnuts I shall simply pass them by,

Not a word about her cookies or her golden pumpkin pie;

Not a line about her puddings or her jams or marmalade,

But a volume in the praises of the Christmases she made.

Oh, the presents they were simple and devoid of tinsel bright,
And were fashioned by her fingers while we calmly slept at night;

And the stories that she told us were as true as true could be,
'Cause she'd heard her mother tell them Christmastimes, the same as we.

Oh, the place where mother "fitted," leaving others in the shade,

Was the genuine, old-fashioned, bang-up Christmases she made.—*The Carlton*.

THE HORSE IN WINTER

The Connecticut Humane Society has issued a circular on the treatment of the horse in winter, which contains many pertinent suggestions, the following among others:

Warm the bits a little on freezing mornings.

Take the chill off the water he drinks.

Be careful about exposing him when overheated.

Blanket him when he stands in the cold.

Have his shoes sharpened when the streets are slippery.

Take no risks of injury to him in skating over asphalt.

Attempt no hard pulls up steep or slippery inclines.

Rub him down when he comes in wet.

Feed carefully and well during the winter.

Blanket and bed him sufficiently on cold nights.

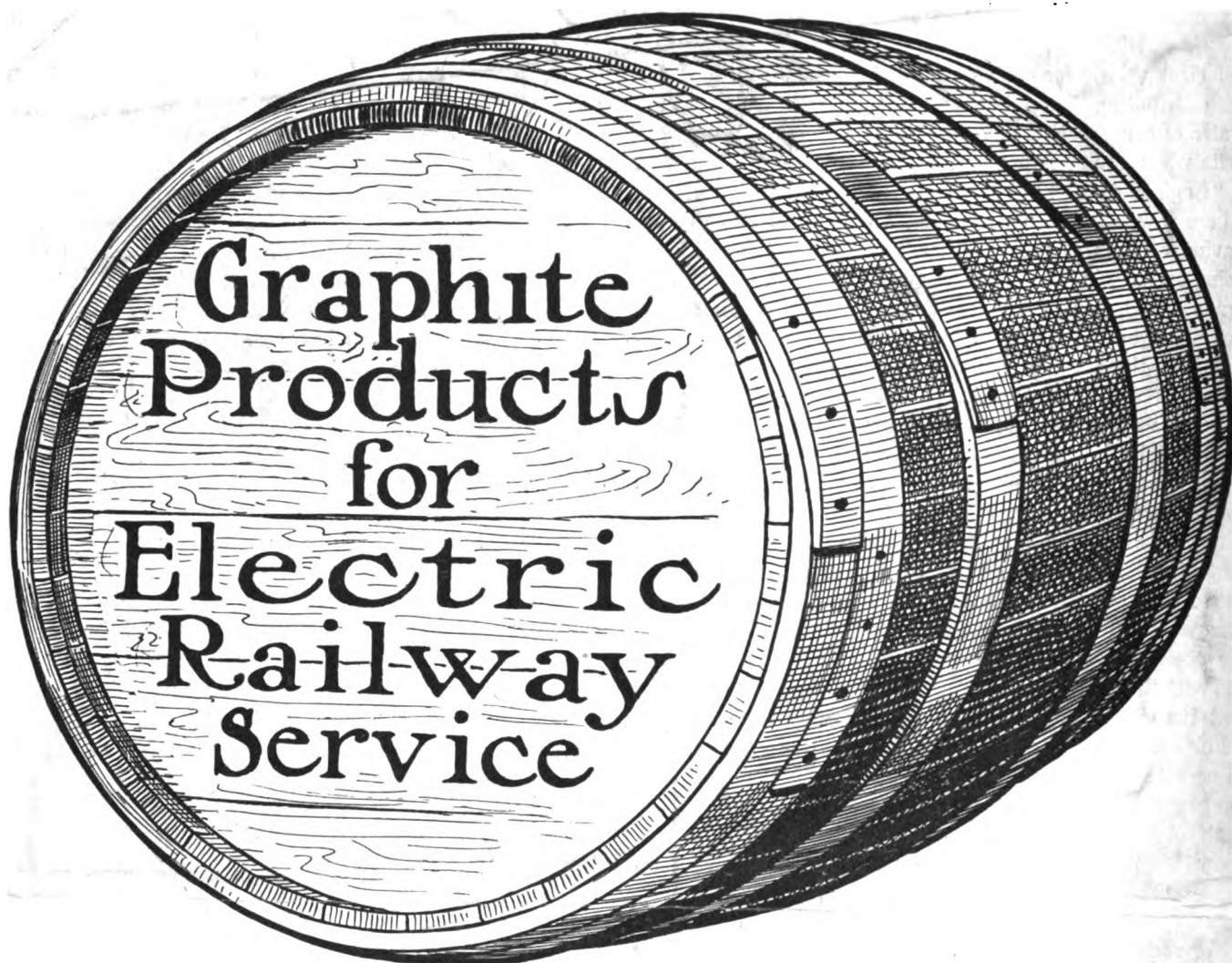
—*Suburban Life*.

THE LITTLE daughter of a clergyman stubbed her toe and said, "Darn!"

"I'll give you ten cents," said her father, "if you'll never say that word again."

A few days afterward she came to him and said:

"Papa, I've got a word worth half a dollar."—*Everybody's*.



Dixon's Graphite Wood Grease

for gear and pinion lubrication. Composed of finely ground cedar fibre, mineral oils and flake graphite. Prevents metallic contact, and coats the gear teeth with a firm, uncrushable layer of flake graphite.

Dixon's Ticonderoga Flake Graphite

for greatly increasing the efficiency of all oils and greases. To be used for lubricating cylinders, valves and bearings in the power plant, for journals, and all frictional surfaces on cars. Made in two degrees of fineness.

Dixon's Special Graphite No. 635

for use where an especial degree of fineness is necessary. It puts a smooth surface on cylinder, allows controllers to be turned easily, prevents dust from sticking to the cylinder contacts, and requires attention no oftener than once a month.

Dixon's Graphite Cup Greases

for use in grease cups on all sorts of machinery. Made in six degrees of hardness. As no animal fats enter into their composition, they will not cause corrosion, even of composition metals.

Dixon's Waterproof Graphite Grease

for gears and heavy mechanism, whether exposed or protected. It cannot be washed off, and will never gum or turn rancid. It will be found valuable for lubricating gears, wire ropes, elevator ways, slides and guides, and switch and signal mechanism.

Dixon's Graphite Curve Grease

for curves and switches, saves many expensive repairs and renewals of curve sections. If used regularly it will greatly reduce the wear on curved tracks and switches, as well as on flanges of car wheels.

Dixon's Silica-Graphite Paint

for steel trolley poles, bridges, smokestacks and boiler fronts. Will not crack or blister, is suited to all climates, readily covers other paints, and is the most lasting metal-preservative known.

Detailed information from special booklet is furnished free for each of the above products. Write us and specify which booklets you care to have.

Joseph Dixon Crucible Company

Jersey City, N. J.



GRAPHITE

VOL. XIV.

JANUARY, 1912.

No. 1.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

PICK-UPS FROM THE TRADE PAPERS

Locomotive Firemen and Enginemen's Magazine for November says: "After a thorough cleaning, rub dry graphite (of an extra fine quality) on the face of the slide valve and on the slide valve seat. This is the same treatment now recommended and used with triple valves. Have a little flat, spade-like tool of hard wood, with the blade just as wide as the face of the slide valve and covered with chamois skin; stick this tool in the dry graphite and then rub it over the surface to be lubricated until the brass has taken a blued polish; then dust away all loose particles of graphite." In this connection the Dixon Company is pleased to advise that the Dixon Air Brake Graphite is highly approved by prominent air brake men as a standard for this class of work.

Motor Age for October contains the following: "If your car is an old one or has seen considerable service, it is possible that the hum in the differential is due to worn gear teeth, or worn bearings, or both, in which case the noise cannot be entirely eliminated except by a replacement of these parts. By using some of the prepared graphite grease on the market, or some prepared by yourself by mixing flake graphite with cylinder oil and grease, in proportions of about one-half pound of graphite, one pound of grease and one pint of cylinder oil, the noise may be considerably reduced. The driving gear housing of the rear axle should be kept about one-third full of this compound; but before putting it in it would be advisable to flush out the old grease or oil with a squirt gun and kerosene." For noisy gears the Dixon Graphite Wood Fibre Grease No. 688 has been found most efficient. As the name implies, this grease incorporates a correct proportion of kiln dried, straight grained cedar fibre which forms a cushion for the gear teeth, thereby preventing metallic contact and greatly reducing noise.

Practical Engineer for November says: "If the heating is not great, mixing graphite with the oil or even putting in a certain amount of dry graphite will sometimes remedy the trouble without necessitating a shut-down." It would read like a fairy tale if we could produce all that has been told us of the wonderful performances of flake graphite properly applied as a cure for hot bearings, etc. Locomotive engineers have

told us that by its use they can pull three or four more cars up a grade. Engines that would not run with oil alone and keep their schedule on account of hot bearings, would be cured by the end of the run when treated with Dixon's Flake Graphite.

Motor Age says in the September 7th issue: "Squeaking springs are usually due to the working of the leaves upon each other and can be remedied in a very easy manner. Jack up the body of the car so that the weight is off the springs and then introduce between the leaves a mixture of flake graphite in a light oil or even kerosene. The oil serves to float the graphite to the place where it will do the most good and the small particles of the graphite become imbedded in the rough surfaces of the leaves and usually effect a permanent relief."

The above quotations are picked at random from the different lines of mechanical activity and truly prove this is a "graphite age," due particularly to the importance that graphite is assuming as a lubricant where close attention is given to the reduction of overhead charges and fixed costs.

NATIONAL ADVERTISING AND WHAT'S BEHIND IT

It is the firm belief of many advertising men, leaders in their profession, that the fundamental reason for all big advertising successes today lies in the genuine merit of the products advertised. This and national advertising are becoming more and more recognized as the two most powerful aids to the development of retail business.

The unconscious effect of these two great forces is to attract a progressive patronage, people who recognize the economy of quality; know what they want and go where they can buy it. It is, perhaps, superfluous to remind a retail merchant, in these times of "scientific management," that his appeal for business should be directed to the people to whom "the recollection of quality remains long after the price is forgotten."

Our inspiration for these few words comes from watching the team work of these two modern salesforces in connection with our pencil business. Activity in our pencil sales has reached a new high water mark and in a large and attractive folder recently mailed to stationers all of the quarter and full page advertisements now running in a large list of general magazines are reproduced in actual size. The folder is designed to represent a huge stage, the curtain of which is raised upon an array of advertisements—the business bringing actors upon the stage of modern merchandising—and an "all star" performance is given to those who "hitch the Dixon advertising campaign to the sales end of their business."

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

President—GEORGE T. SMITH
Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
Ass't Treas. & Ass't Sec'y—J. H. SCHERMERHORN

DIRECTORS:

GEORGE T. SMITH	WILLIAM H. CORBIN
GEORGE E. LONG	EDWARD L. YOUNG
WILLIAM MURRAY	HARRY DAILEY
WILLIAM G. BUMSTED	

OFFICES AND SALESROOMS:

NEW YORK SALESROOM, 68 Reade Street.
 PHILADELPHIA SALESROOM, 1020 Arch Street.
 SAN FRANCISCO SALESROOM, 145 Second Street.
 CHICAGO OFFICE, 1324 Monadnock Block.
 BOSTON OFFICE, 648 John Hancock Building.
 PITTSBURG OFFICE, Wabash Terminal Building.
 ST. LOUIS OFFICE, 501 Victoria Building.
 WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
 BALTIMORE OFFICE, 1005 Union Trust Building.
 BUFFALO OFFICE, 72 Erie County Savings Bank Building.
 ATLANTA OFFICE, Fourth National Bank Building.
 EUROPEAN AGENTS
 Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

INSURANCE IN LUBRICATION

Most every man is a gambler, still he likes to play safe—for that reason he insures his life, his property and his happiness whenever possible. Insurance really is gambling, the other fellow taking all of the risk and responsibility—it is a fair gamble as both sides play safe. What an uneasy feeling it must be to the man who has great responsibilities, and every man has them, to think that if he should be called to that unknown land, his family is not provided for.

Then there is the business side of insurance. Some companies set aside a certain amount of money for use for a sinking fund to cover fire and accidents.

All this is leading up to the subject of insuring machinery of

various kinds from wear and the junk pile, which are synonymous terms.

Flake graphite is one of the strongest possible insurance policies against friction, it is the only one form in which there is no gambling involved, because it has been proven that wear is reduced to a minimum when flake graphite is correctly applied. That is the reason why we today find flake graphite in its various forms, such as the Joseph Dixon Crucible Company offer, used and recommended by automobile specialists, railroad specialists, shop specialists and in fact in all lines of activity. It has a most enviable record of past performances and as an annihilator of friction a record always open for inspection and the closest scrutiny.

The eleventh edition of "Graphite as a Lubricant" is full of valuable information which is well worth careful study by those who have to do with the solving of mechanical problems. It is sent gratis to those interested.

CONSTRUCTIVE ABILITY

Whatever the various publications have had to say in regard to the struggles and poverty and ambition and genius of the late Joseph Pulitzer, each and every one has paid tribute to what they have been pleased to term his constructive genius, or words carrying the same meaning. His touch had vitalized two moribund daily newspapers in two of the greatest cities of the country, one in the East and one in the West. At the time of his death both these properties were among the most valuable newspaper estates in the land.

Joseph Pulitzer had been trained to his business. He knew every detail of his business and he made it his business to attend to that particular business early and late and all the time.

Although he found time to give more or less attention to many things outside of his two great publications, his heart and force and genius seemed centred on the *New York World* and the *St. Louis Post-Dispatch*.

In his childhood he received some instruction from a private tutor which was a sum total of his schooling. His knowledge of languages, art and other attainments he became possessed of through his own industry and hard work.

Joseph Pulitzer stood for the recognized principle in business that you cannot take out of a venture more than you put in—not of money, but of brain, of effort, of achievement.

To be successful in business, a man must have unquenchable enthusiasm and an indomitable will and a comprehensive idea of what his business is and of how that business can be made great and profitable. That Joseph Pulitzer made mistakes is not to be wondered at, but his successes immeasurably outnumbered his errors.

CUTTING STEEL WITH A FLAME

We read in the *Daily Consular Trade Reports* of the patent acetone process of cutting, with a flame forced out of a jet at terrific pressure, some steel beams and a bulkhead on a ship, where it was desired to convert two foreholds into one. What would have required four men about three days to cut out with hammers and chisels was removed in seventy-five minutes by the acetone process.

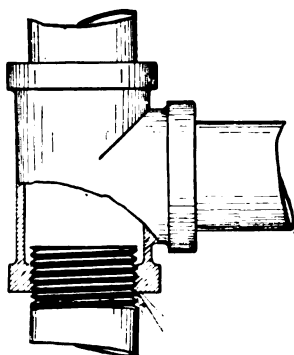
RED LEAD FOR PIPE JOINTS

By W. H. WAKEMAN

For a long time I have been opposed to the use of red lead on pipe fittings, for two reasons. First, because the fitter generally uses too much, and puts it on the inside of every fitting. Second, when it becomes necessary to take these joints apart, it is almost impossible to unscrew them, hence the fittings must be broken. Of course it does not pay to save the fittings on small and medium-sized work, unless the joints come apart readily, as it is much cheaper to break a fifty cent fitting than to spend a dollar's worth of time trying to unscrew it, especially if the fitting is cracked in the unscrewing process, as it frequently is.

Sometimes gas fixtures are found nearly full of lead when they are taken down for any cause. As there was not enough pressure in the pipes while it was in service to force it through into some of the very small passages where it would entirely stop the flow of gas, and thus compel its removal, it prevented good service and nobody knew the cause.

The flow of water through small pipes is frequently retarded by an excessive amount of red lead in or near the fittings, especially if water was not turned into the pipes until after the lead had become hardened in place. For this reason I seldom put lead on the inside of a fitting (if I use it at all), but apply it on the pipe-thread only. I remember one exception to this



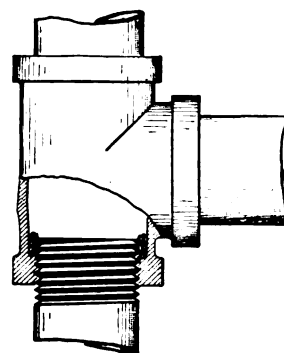
rule, where only one galvanized iron tee was available at that time. It had been used once, but was all right except that screwing ordinary tapering threads into it had expanded the metal. Lead was put on the threads, which were then screwed in until apparently tight joints were secured. When cold water under sixty pound pressure was turned on, one joint leaked. The pipe was taken out and more lead carefully put on every thread. When tried again the leak was still in evidence, consequently if another tee could have been secured easily, this one would have gone into the scrap heap. Although thoroughly prejudiced against the practice of putting lead in fittings, I was willing to give it a trial and the result was a tight joint.

While this is not a new idea to steam and water-fitters, it is sure to interest some readers who are looking for points along this line. The illustrations show how, in my first attempt, the lead was scraped off when put on the threads and flat pipe, but it caused the pipe to turn hard lead on the inside of the tee, consequently the pressure forced it out into the crevices and prevented leakage.

Graphite might not have had the same effect in this particular case, but it was worth trying under the same conditions. Lead will work into spaces left by broken threads and flat

pipe, but it causes the pipe to turn hard when making the joints, consequently the fitter thinks that he has a tight joint, when excessive friction is responsible for the hard work. Graphite is a lubricant, hence when mixed with cylinder oil and kerosene, it lubricates the threads and under ordinary conditions will allow the pipe to turn comparatively easily until the two parts are brought metal-to-metal, with no chance for filling between them. The kerosene prevents it from becoming too stiff for convenient use.

Another point to be considered is that graphite seldom or never has injurious effect on valves, cocks, or other appliances into which it may be carried by the flow of water or steam through the pipes, which is more than can be said of red lead. A few days ago I took down some galvanized water-pipe that

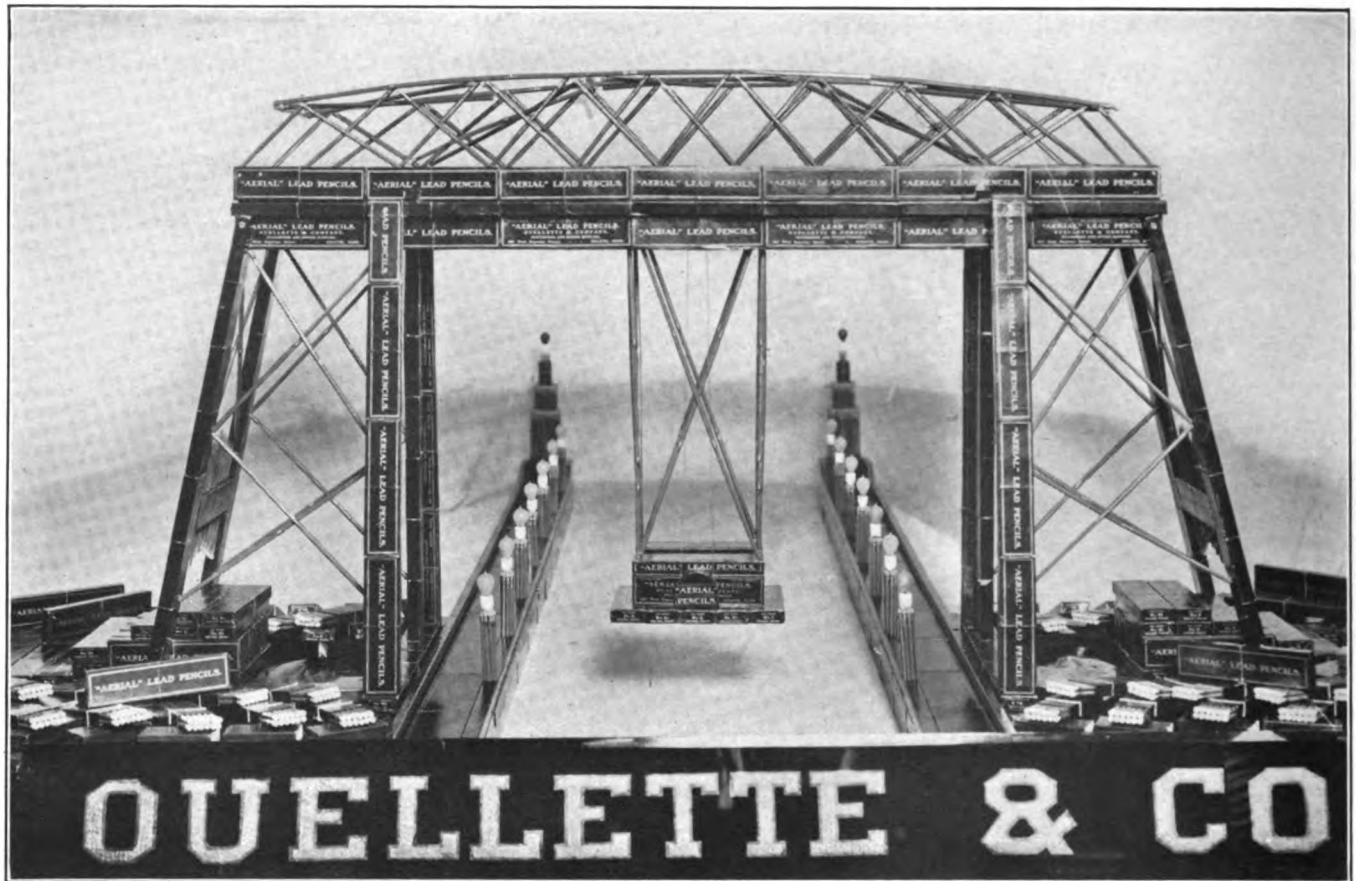


I put up more than fifteen years ago. The joints were still tight, but they came apart easily without crushing the pipe or hammering the fittings. Dixon's Flake Graphite mixed with cylinder oil was used on this job.

A short time ago the foreman of a shop informed me that the joints in some steam-piping in his plant leaked soon after the line was installed. Repeated calking did not prove a remedy, causing annoyance and unpleasant work. While changes in the plant were progressing, it was necessary to take these joints apart, and much trouble was anticipated, but when the job was begun they came apart easily, because the threads were not screwed up tight.

I have seen steam-fitters who apparently only cared to get pay for their time, as they did not intend to use the piping after it was installed, but in this case the engineer superintended the job and it is only reasonable to suppose that he would make what appeared to be good joints, to save himself trouble in the future, and this was undoubtedly the case. My theory is that some thick substance resembling lead was put on these threads and the resulting friction convinced the workmen that good joints were made, but when steam was turned on, the material was blown out, and of course calking was not effective under those conditions. If every internal and external thread had been nicely painted with graphite (using a common brush for the purpose) the joints would have been made up metal-to-metal, thus preventing future trouble, or if slight leaks had appeared, the calking tool would soon put them out of business.—*Domestic Engineering*.

Die and depart, Old Year, old sorrow!
 Welcome, O morning air of health and strength!
 O glad New Year, bring us new hope tomorrow,
 With blossom, leaf and fruitage bright at length.
 —CELIA THAXTER in the *Atlantic Monthly*.



OUELLETTE & CO'S. "AERIAL BRIDGE" OF "AERIAL PENCILS"

A window display of pencils which has not only won local enthusiasm, but, on account of its great mechanical ingenuity aroused great interest among stationery trade journals, is that of Ouellette & Company, the well known stationers of Duluth, Minn.

Geyer's Stationer, in speaking of this window display, says that "the Joseph Dixon Crucible Company is having its product featured in rather an unusual, but effective manner," and later, in the same article, warms up to the subject by stating that "Mr. Ouellette has wrought a splendid piece of work" and that the display is a "mechanical advertisement which is compelling by the sheer force of its originality and attractiveness."

Both *Geyer's Stationer* and the *American Stationer* reproduced an excellent photograph of this pencil display similar to the one on this page, but neither one's description seems to have been as complete as that of a local (Duluth) newspaper, the name of which we do not possess. This newspaper states that "a cleverly executed reproduction of the Aerial Bridge with pencils and pencil boxes manufactured by the Joseph Dixon Crucible Company of Jersey City, N. J., as the materials entering into its construction, is an attractive exhibit in the window of Ouellette & Company, 327 West Superior Street. The attention of throngs of passers-by has been drawn to it.

It is a miniature fac-simile of the bridge, six feet in length by three feet in width, every detail being brought out from the upper works to the gear boxes in the car beneath, not overlooking the canal and pier below with its electric white way.

The affair reflects great credit upon the ingenuity of Alfred E. Ouellette, its maker, who occupied his spare time for several weeks in working it out. He has received the warm commendation of many machinists, who have been much interested in examining its details.

It is electrically operated from a motor in the store basement. A forty-two inch cord cable passing from a twenty-eight inch diameter shaft connects with the upper portion of the bridge and passes around its entire top. By an automatic device the cord is gripped, and the car drawn the length of the bridge just as it occurs at the foot of Lake Avenue, and released again before it reaches the end of its run.

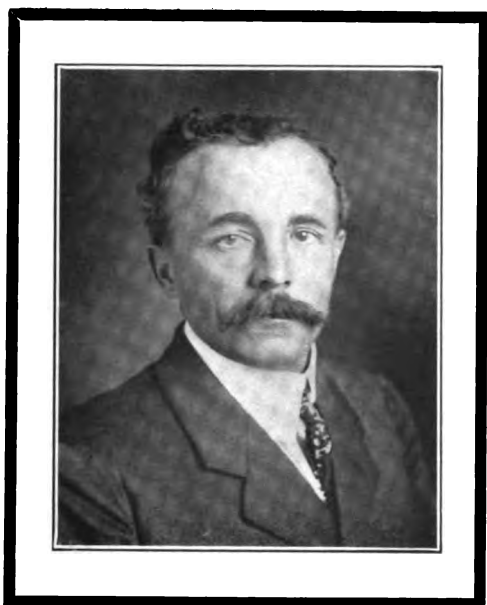
The operation is repeated when the cable gets back into position, the clutch automatically gripping it again. In solving the mechanical puzzle involved in this clutch, Mr. Ouellette's ingenuity was taxed for some time, but he finally succeeded in solving the riddle.

The Aeria pencil is especially made for Ouellette & Company and is proving a ready seller. The bridge, it is generally remarked, comes most appropriately in line with the firm's advertising campaign in introducing it."

ONE CENT LETTER POSTAGE

We are advised that according to officers of the United States Post Office Department the one cent letter postage is inevitable.

Assistant Postmaster General James J. Britt, speaking at Cleveland on behalf of Postmaster General Hitchcock and the Department, declared definitely and emphatically that just as soon as a re-adjustment of postal rates can be brought about, one cent postage will be possible.



In November last there passed from the life of this world Mr. C. E. Herrick, who for twenty-three years had been the manager of the cedar mills and lumber interests of the Joseph Dixon Crucible Company in Florida.

Mr. Herrick was born in Michigan, but left that state when a child, so that, practically speaking, his entire life had been spent in Florida. His business as a cedar buyer enabled him to make a careful study of Florida, with the result that he always had at heart the interest of Florida and its people, and knew both thoroughly.

For several years Mr. Herrick had been suffering from a complication of diseases, the most severe of which was diabetes.

Some months ago he entered a sanatorium at Atlanta, Ga., and after a time went up into the mountains of North Carolina feeling much better, but finally was obliged to return to his home at Crystal River, Florida, where he ended his days.

Mr. Herrick was a man of high quality, he enjoyed such studies as mathematics, astronomy and mental philosophy. He was well posted in the politics of his state and of the United States.

He commanded the respect of his fellows and was honored with the gift of office by them. He was the president of the Crystal River Bank and an officer in all of the important associations or institutions of his town and county.

He leaves a wife, a son and daughter.

DIXON'S SILICA-GRAPHITE PAINT

In the November issue of GRAPHITE it was our pleasure to illustrate a section of the Front Street Viaduct of the New York, New Haven and Hartford Railroad at Worcester, Mass., which is protected with Dixon's Silica-Graphite Paint.

The Boston Budget and Beacon of November 4, gives an excellent illustration of the facade of this beautiful new station in Worcester, and we take pleasure in quoting from the article as follows:

"Doubtless the greatest enemy to steel is corrosion. Probably no type of steel structure is more subject to the severe attack of the elements and rust-producing agencies than the structures that support the railroad. For this reason engineers realize the vital importance of protecting the steel sur-

faces with a coating that will withstand the effects of air and moisture, the fierce sleet storms of winter, the burning sun and wind-driven dust of summer. On this work in Worcester, Dixon's Paint, manufactured by the Joseph Dixon Crucible Company, Jersey City, was used. It is a product which has been manufactured by this reliable and well-known concern for over half a century.

"The modern engineer, seeking for the best product for protecting steel, does not need to conduct a series of tedious tests with Dixon's Silica-Graphite Paint to be convinced of the excellent qualities as a protector of exposed metal, for many practical tests are shown on hundreds of railroad bridges painted with this well-known product. A careful inspection of these bridges, some of which have not been repainted for years, emphasize the fact that crystalline flake graphite as contained in Dixon's Silica-Graphite Paint, is the finest of all graphite pigments."

MAYOR GAYNOR

His Opinion on the Regulation of Commerce by Lawyers and Legislatures

Mayor Gaynor was the principal speaker at a dinner of 500 members of the Advertising Men's League of New York. In his speech the Mayor said: "The business men of the country make the country, and I do not know anybody who should have more to say about public affairs and about government than the business men of this country.

"Nearly every generation of history has troubled itself a great deal to pass laws to regulate commerce as it is called, and we are at it yet to this day. And yet every succeeding generation has seen up to the present time that all the laws passed to regulate commerce could not have been better contrived to interfere with commerce and hinder commerce.

"We are engaged in it now and have been for several years. The same session of the Legislature that passes laws to enable one corporation to own the stock of any number of corporations and thereby unite all these corporations into one combine, or trust as it is called, will pass some flaming anti-trust law to forbid combinations and trusts altogether. And then, after the lapse of a generation or so, they get busy and bring law suits to break the whole thing up, and so it goes on.

"I think it may be truthfully said that all the truthfulness does not belong to the lawyers and to the judges. I think there is a great deal of it in the business world at large and that we are now in an era when the truth is told about prices, when the substantial truth is told about the quality of merchandise and therefore, when you men who write advertisements and who seek them are not put to your wit's ends to puff them up outside of the broad highway of truth after all."

CERTAINLY! OF COURSE!

If a catalog of words is a dictionary, won't a catalog of pencils be a Dixonary?—A. B. VAN DORN.

A READER of GRAPHITE writes: "I have been getting GRAPHITE for the past year and wish to have you send it to me again next year. It certainly has interested me a great deal in your products."



C.H. MURRELL 1911



J.P. CHASE 1910



J.D. CAHILL 1911



J.H. LEWIS 1909



MISS R. FOSTER 1911



M.L. ROWE 1908

ATLANTA
SALES FORCE

JOSEPH DIXON
CRUCIBLE CO.



J.H. JEWETT 1909

THE JOSEPH DIXON CRUCIBLE COMPANY'S SALES FORCE FROM THE SOUTHERN DISTRICT

Now is the time of the year when many are enjoying a winter in the balmy climate of the "Sunny South." Appropriate as this title for the South will always be, it can no longer be considered truly representative, and like the "Wild and Woolly West" is fast disappearing to be replaced by something that will fit the spirit of the day.

For far more than a decade the South has been busy fulfilling the great future which had been prophesied for it and today its industrial activities are reaping a proportionate amount of profits for the many who were wise enough to invest in them a sufficient quantity of their time, money and energy.

Always a firm believer in the tremendous possibilities of the South and its development, the Joseph Dixon Crucible Company carried its belief to action, and though only little over two years ago this took definite form in the way of opening a branch office, the business of the Dixon Company may well be considered as established upon the ground floor of Southern achievements.

Both in the selection of a location for its Southern business headquarters and in a man to manage its Southern interests, the Dixon Company were indeed fortunate. Atlanta has been many times called the New York of the South and were an average individual from another section of the country to be suddenly dropped upon one of its bustling streets, without knowing his whereabouts, it would be very doubtful if that person could at once place himself in a Southern metropolis.

It is said that opportunity knocks but once, but however true that may be, the Dixon Company was not very slow in grasping that invisible person and the reward obtained was a manager whose life had been spent and training acquired amid the life and among the people to whom the Dixon Company wished to increase the sale of its products.

Formerly connected with the Tower Manufacturing and Novelty Company for twenty years, Mr. John H. Lewis, better known throughout the South as "Jack" Lewis, came to the Dixon Company an almost "ready made" manager and has since, in only a short period, proved himself to be equipped with just the spirit and experience needed by the Dixon Company to build up a thriving branch office. Mr. Lewis' well known ability and industry have aided him materially in becoming what *Geyer's Stationer*, under an excellent likeness of him, calls "Popular Jack Lewis." Mr. Lewis' great popularity not only extends among those with whom he comes in business contact and to the trade journals whose influence helps him to further enjoy the confidence of the trade, but to all others who meet him socially, he is acknowledged to be "a jolly good fellow," in the best sense that term implies.

Mr. Lewis personally interests himself in taking care of the larger concerns in the Southern district which, by the way, consists of the Carolinas, Georgia, Florida, Alabama and Mississippi. Though always informed regarding the happenings at the Atlanta Office, Mr. Lewis finds time to thoroughly plan the work of his assistants, and in this way leaves undeveloped no possible route to more business. In his assistants, Mr. Lewis is surrounded by those to whom he may safely leave the details of his many sales plans.

According to the *Charleston News and Courier*, Charleston, S. C., a charming young lady and the Dixon Anglo-Saxon Pencil is about as all-conquering as the famous Baker and his mighty stick. The *News and Courier* says: "Miss Ruth Foster of Atlanta has been in Charleston for several days in the interest of the Joseph Dixon Crucible Company, and met with merited success. Miss Foster is a charming young lady, attractive in appearance and as magnetic in manner as the celebrated Miss Lula Hurst—also a Georgian—was in muscle. She graciously gave a dreary old man a handsome lead pencil and though it was stamped "Anglo-Saxon," it is treasured by an ardent Celt, who speaks of the sweet, fair donor as his cherished Foster sister."

And with a glance at the picture of the young lady in question, which is reproduced in this issue of GRAPHITE, our readers will no doubt verify the enthusiastic remarks of this "ardent Celt" as entirely unbiased.

Mr. M. L. Rowe shares with Mr. Lewis the advantage of having a previous experience to fit him for the position he holds with the Dixon Company. Mr. Rowe, like many who have adopted the South as the scene of their work, hails from another part of the country and Reading, Pa., is his home town and is where he graduated from college. Mr. Rowe is fortunate in having worked under C. E. Duryea, one of the pioneer automobile builders of America, and the knowledge gained of the automobile business during the four years in which he traveled for the Duryea Company from Maine and the Eastern coast down into Cuba, enabled him to later take charge of a garage for one of the prominent automobile concerns of this country. Mr. Rowe had been with the Dixon Company previous to the opening of its Atlanta office, and now represents the company's full line of graphite products in the states of North and South Carolina.

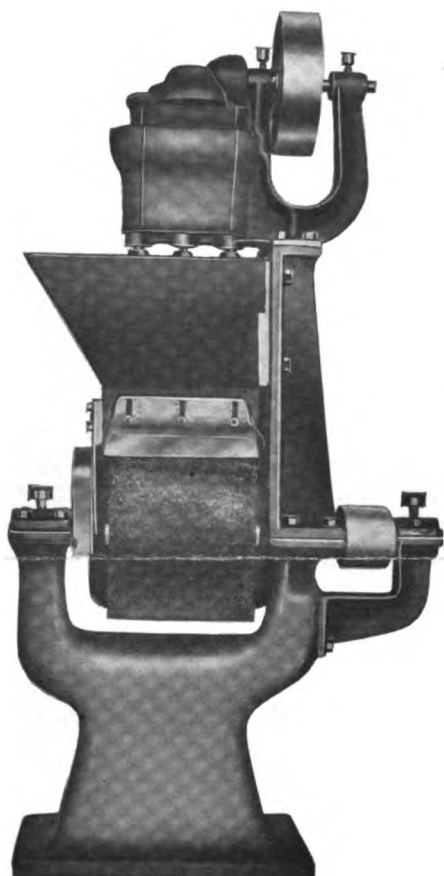
Mr. J. H. Jewett is one of those fortunate individuals who, after eight years of life in New York City and possessed of all the experience such a residence affords, was enabled to sever his connections and follow out his desire for a more congenial atmosphere in which to enjoy his work. Mr. Jewett prizes the agreeable experiences he has met with and the many pleasant acquaintances he has made since his association with the Dixon Company in the South. Mr. Jewett covers for the Dixon Company the states of Alabama and Mississippi.

Those of our readers who were interested in the account of the unique campaign for Dixon's Graphite Automobile Lubricants, described in the last issue of GRAPHITE, are already familiar with the work of Mr. C. H. Murrell, who assumes the unattractive, though businesslike title of "Murrell, the Greaser." Mr. Murrell's sincere enthusiasm for his work is born of that practical experience which makes it both valuable and convincing. The motor car owners who hear Mr. Murrell talk, no longer discuss so much about the different "makes" as they do of their knowledge that Dixon's Graphite Motor Lubricants can render to the cheaper cars a lubricating service that will make their wearing capacity equal to that of the higher priced machines when the latter's more finely made parts are lubricated with only oil or ordinary grease.

Mr. L. M. Chase, like Mr. Lewis, was formerly associated with the Tower Manufacturing and Novelty Company, and the South has also claimed him for many years during which he has become widely acquainted and well liked by the trade.

Mr. J. D. Cahill is another of the newer members of the Atlanta salesforce and one from whom Mr. Lewis expects an excellent showing. Judging from the look of confident determination on Mr. Cahill's face (see illustration page 2386), and by the record he has already made, Mr. Lewis will not be dissatisfied.

Altogether Mr. Lewis has as fine a staff of salesmen (including Miss Foster, of course) as he himself is a manager, and this we consider as fine a compliment to the Atlanta branch as we are capable of giving.



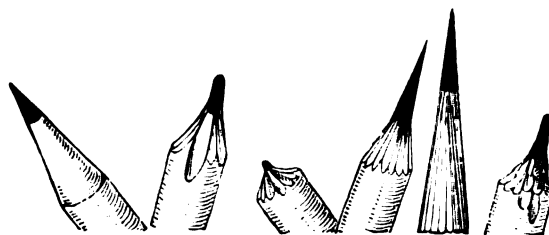
The illustration above represents Model No. 2 of the Bilz Sand Mixer and Sifter. The machine was built by the Bilz Sand Mixing and Sifting Machine Company, 1314 Findlay Avenue, New York City.

The Bilz Sand Mixer and Sifter is designed on novel principles, its main feature being the use of a cylindrical wire brush located just below the bottom of the feed hopper and running at about 1,000 revolutions per minute. This brush draws the sand gradually from the hopper, throws it forcibly through the air and deposits it, thoroughly mixed, in a heap on the floor, while all foreign particles, such as nails, wire, wood, etc., are, on account of their heavier weight, projected still farther from the machine and deposited in a separate pile, leaving the sand perfectly mixed, all ready for use and in better condition for casting work than can be secured by hand treatment. The sand, furthermore, is much finer, being about equal to sand passed through a No. 16 sieve.

In addition to the saving in time, a material economy is effected by eliminating the cost of sieves. Another advantage is that wet French sand can be run through without drying.

If sand is too wet for molding purposes and requires mixing with dry sand or other material, it should be mixed the night before using, so as to prevent dust when sifting. All danger of blood poisoning through the molders' hands coming in contact with nails, broken wires, etc., has been removed, and better work has been made possible because the lower cost of mixing and sifting permits the use of fine sand to a depth of three or four inches from the face of a mold, instead of the usual thin layer.

The machine illustrated above is fitted with a feed-hopper and an automatic feeding device, which greatly increases the output of sand and decreases the cost of labor. The only labor involved is that of keeping the hopper filled with sand. One man with this machine can keep fifty molders supplied with all the sand that they can use.



CLEAN WAY TO SHARPEN A LEAD PENCIL

The *New York Press* offers the following for the woman who scorns the allegation that she cannot sharpen a lead pencil. Any woman will tell you that she can sharpen a pencil perfectly if she wants to, but that she dislikes to get her fingers and the front of her blouse covered with graphite which forms the "lead" of the lead pencil.

The *Press* says: "Before you start to cut just stab your knife blade into a bit of paper, shove the paper toward the handle of the knife and proceed. The paper will act as a perfect shield against the soiling graphite dust and your hands and your shirtwaist will stay immaculate, no matter how many times you break the lead off before you get the thing whittled into a decent point."

Evidently the writer of the above by intimating that the young woman may break the lead off many times, has an idea that after all as a pencil sharpener a woman is not a success.

THERE is too much said at New Year's about turning over a new leaf. Are the old leaves all so badly written that we must hasten to forget them? Is the blank whiteness of the untouched page more pleasing to the eye, or more fortifying to the will than those closely written, underlined, untidy, but familiar pages which make up the story of one's life?

—BLISS PERRY in the *Atlantic Monthly*.

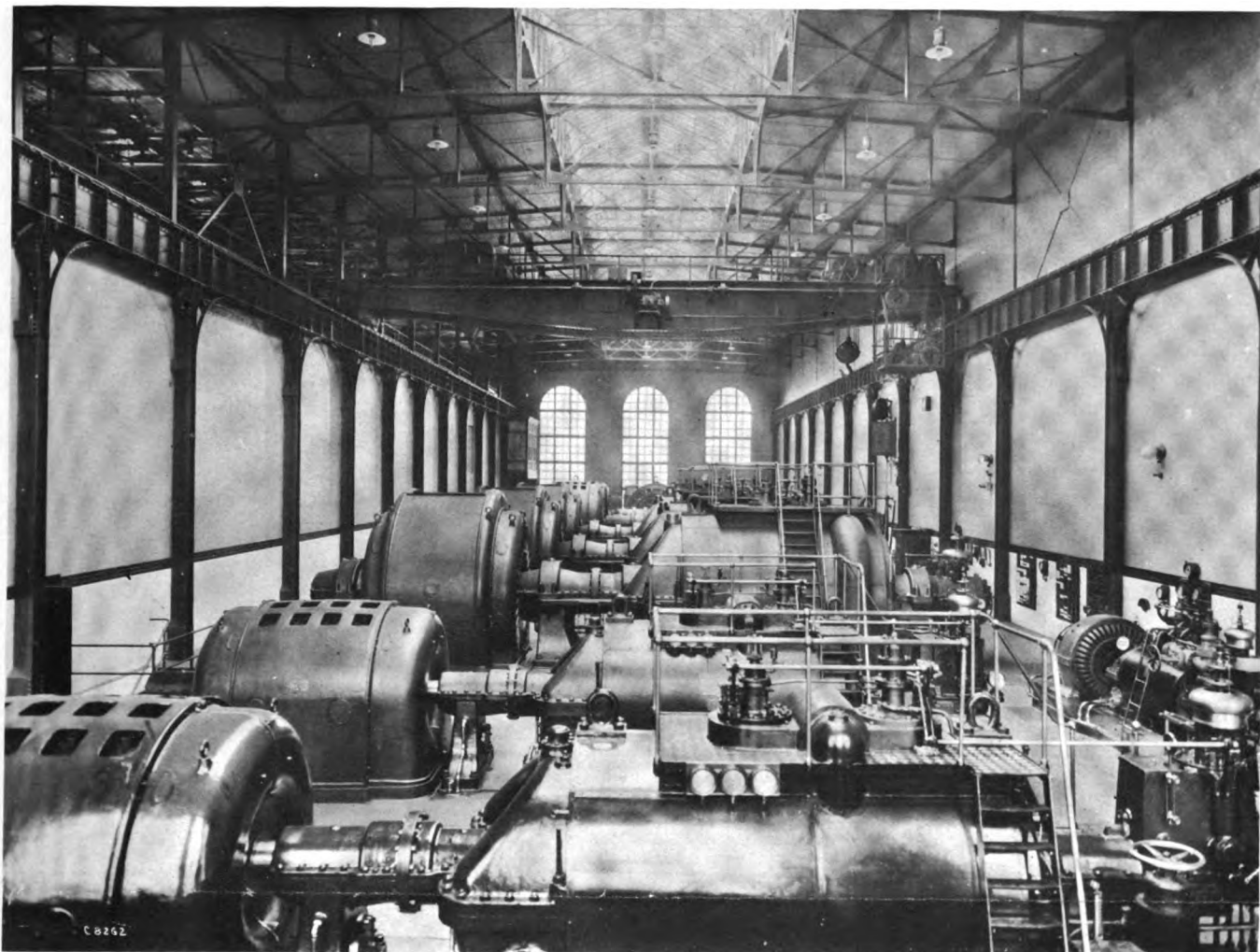
A GIFTED BARBER

"The barber told me a very interesting story as he shaved me."

"Indeed?"

"Yes; he also illustrated it with cuts."—*Pittsburg Post*.

HE WHO knows and knows he knows is wise—he uses Dixon's Flake Graphite.



**LONG ISLAND CITY POWER STATION OF THE
PENNSYLVANIA, NEW YORK AND
LONG ISLAND R. R.**

The main power station of the Pennsylvania, New York and Long Island Railroad operates, as we omitted to state in a description of its coal handling plant in the December issue of GRAPHITE, both the East River tunnel section and the electrified lines of the Long Island Railroad.

Like all large power stations of modern construction, the superstructure of the building consists of steel framework which carries the weight of the room and the entire contents of the building, excepting such portions of the machinery as may be more conveniently carried on separate foundations.

The south wall of the boiler house supports the outer ends of the boiler room roof trusses on that side of the building, but in other respects the steel superstructure is independent of the building walls.

The steel framing of the boiler house and engine room are necessarily different in type, as the former has to carry a double tier of boilers with flues, economizers, etc., and a coal pocket of 5,200 tons capacity on top of everything, while the engine room consists of simply a large open space which makes the roof truss construction the most conspicuous feature, but aside from this does not involve any difficulties. Conditions in the boiler house are, however, more complex, chiefly by reason of the imposition of the coal pocket, which runs the entire length of the building.

The four steel stacks are independent of the boiler house, excepting where they pass through the lower fire-room floor, at which point the floor is built against the stacks. At other points they pass through circular openings in the floors and roofs, so that there is no stress induced upon the structure by deflection of the stacks under stress of wind.

The well-known New York firm of contracting painters, the Vassilaros Contracting Company, located in the New York Tribune Building, applied two coats of Dixon's Silica-Graphite Paint on the above steel structure, using Dixon's Dark Red for the shop coat, and Dixon's Olive Green for finishing coat.

POOR business? Nothing doing the last week of the year? No one wants to put in any goods until after inventory time? Well, the Dixon Company shipped 741,000 numbers of crucibles between holidays and it was lucky we had some stock on hand, as we only made 281,000 numbers that week, even though we worked full time.

Pencil business was good and a car load of automobile lubricants shipped to Los Angeles. Thirty-one orders were received in one day. Only one was marked to be received in 1912; all others were marked rush.

WE CARE not who writes the nation's poetry, we prefer to keep its machinery in prime condition by supplying Dixon's Flake Graphite.

WHAT TEDDY TETZLAFF SAYS

Our San Francisco office has been giving very close attention to the Dixon Automobile Lubricants in its territory, with the result that they are as well known on the Pacific Coast as elsewhere.

Our branch manager, Mr. A. C. Bowles, has sent us some very fine testimonials from users of the Dixon Lubricants and we will have much pleasure in reproducing them from time to time in GRAPHITE. The letters are *voluntarily* written by automobile men of national reputation and show that the Dixon Lubricants are always very much in evidence where the duty is severe and the conditions most trying. The first letter which we have great pleasure in reproducing, is from Mr. Teddy Tetzlaff, who is always to be reckoned with in any endurance speed tests.

LOS ANGELES, CAL., Oct. 26, 1911.

Messrs. Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—I first used your goods in the Lozier car which I drove at the Santa Monica Road Races in 1910. The car, as you know, made the fastest time ever made at road races in the United States. I attribute the success of the car to the use of Dixon's Graphite Automobile Lubricants, for the reason that they increased the speed of the car six miles per hour.

With the same car, using the same lubricants, I broke all track records in competition at Playa del Rey in the 25, 50 and 100 mile distances.

In my subsequent races with the Lozier car, I also used your lubricants.

At the recent road race meet at Santa Monica, driving the Fiat "90," I used your No. 675 in the transmission and differential, Graphitoleo in the wheel spindles, and your chain compound. While I did not win this race, due to tire and spark plug trouble, I did make the fastest fifty miles ever made upon any road race course, also winning all the races entered at the Motordrome at Playa del Rey on October 21st and 22nd, making five miles in competition in three minutes nineteen seconds, one mile in thirty-seven seconds.

I have made the remark that I would rather pay \$5.00 per pound for Dixon's Graphite Automobile Lubricants than use any other as a gift. I think that this remark shows my appreciation of Dixon's goods better than anything else I can say. If anybody or anyone wishes further information as to what I think of your products, kindly refer them to me.

Yours very truly,

(Signed) TEDDY TETZLAFF.

THE following letters are sent to us in acknowledgment of our card giving the specific gravities and melting points of metals.

We take pleasure in printing them and advising all crucible users to prove these statements in their own shops.

November 22, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

DEAR SIRs:—We have your favor of the 18th inst., together with the card giving the melting points of metal and specific gravities, for which we thank you very much, as this is a very nice thing to have.

As you know, we have used Dixon's Crucibles for some time, and they are giving very good satisfaction. We have been approached by a great many other manufacturers, but have not, up to this time, seen any reason for making a change.

Again thanking you for your courtesy, we remain,

Yours very truly,

November 21, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

DEAR SIRs:—We have your favor of the 18th inst., together with enclosed card, for which we thank you.

We have used Dixon's Crucibles for some time past and have been very well pleased with them. We shall continue use of the same, as for several years we have used these alone and they have given very good satisfaction.

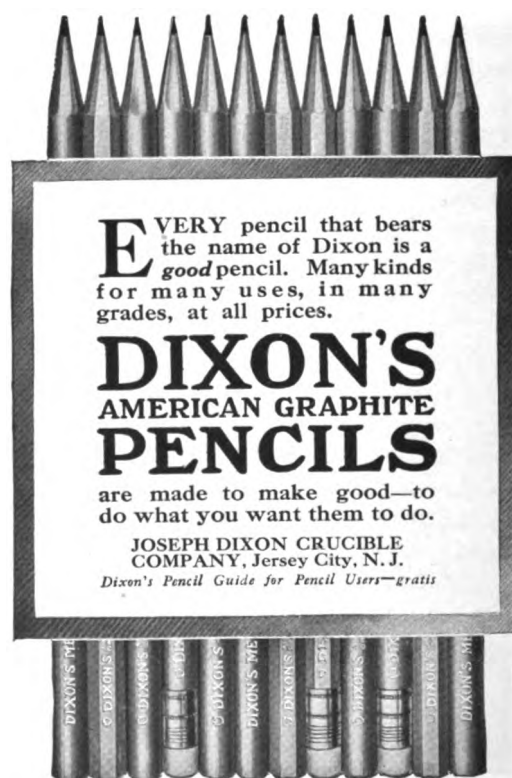
Yours very truly,

"STICK TO YOUR LAST"

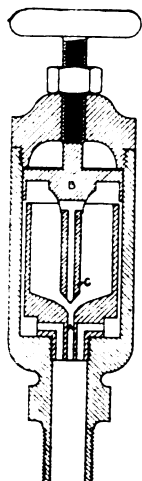
The *American Machinist* says: "Only reliable concerns having products that can be used to advantage in and around machine-making plants, can advertise in the *American Machinist*. Your attention is not distracted by subjects you are not interested in. Only reliable products can be advertised in the *American Machinist*."

In other words, you need not expect to find advertisements of hats, clothes, spring bonnets or homes in the *American Machinist*.

AN OUNCE of performance is worth a pound of profession—Dixon's Flake Graphite has made good.



GRAPHITE LUBRICATOR



Everyone realizes the greatly increased efficiency of lubrication when flake graphite is used and many clever devices have been designed to feed graphite continuously. From time to time these new appliances are brought to our attention and we are always pleased to place their merits before our readers who are interested in better lubrication.

The accompanying sketch shows in cross section a lubricating cup designed for the purpose of feeding either dry graphite or graphite and oil to cylinders. The principle on which the cup operates is that of a pump actuated by the difference in pressure during the exhaust and working strokes of the engine.

During the period of high pressure, *B* is lifted to the position shown in the figure, and on the low pressure strokes falls so that the pin *C* seals the valve opening. This alternate rise and fall of *B*, due to the changing pressures, permits the lubricant to gradually feed through valve *A*.

The adjusting screw on the top of the cup is to be regulated according to the amount of feed desired.

The object of having the valve stem drilled is to force the dry graphite down through *A* in case it should become clogged or the pressure equalized.

The cup will operate either on steam chests or cylinders and also on gasoline motor cylinders. It has been thoroughly tested on locomotive cylinders with the very best of results.

UNDER the heading "Lubrication of Gas Engines" by Percy J. Friday, in *Gas Power*, November 1911 issue, the following appeared:

"One requirement of a perfect lubricant would be that it be consumed entirely or not at all, by the combustion in the cylinder. This would prevent all sooting due to the lubricant. Graphite fulfills the last requirement. It is not affected in any way by the temperature obtained in a gas engine cylinder. It forms a smooth coating over the surfaces. All microscopic grooves and holes are filled with it. It keeps the surfaces apart and improves compression by actually making the piston larger and the cylinder smaller. It helps to prevent binding of the piston. The use of graphite alone is not advised. But its good properties added to those of oil makes their combination an excellent lubricant for cylinders and also bearings.

"It is not advisable to feed graphite in a common gravity feed oil cup. It may clog up the passage and cause trouble. It is often put into the cylinder through the spark plug hole with a bug gun or blown in with a tube and quill. One should never use more than a small teaspoonful for every pint of oil used. When a piston is taken out it should be thoroughly rubbed with graphite after being cleaned. Also any bearing and shaft when taken apart. Always use the fine graphite which is prepared especially for use where oil is also used.

"Graphite tests were made by Professor Goss of Purdue University. He used a large pendulum machine especially constructed to receive an axle, journal and box as are used on large freight cars. After making experiments with this machine, Professor Goss published the following conclusions

which he derived from the test: (1) The addition of graphite to oil results in a lower frictional resistance of the journal than would be obtained by the use of oil alone. (2) The amount of oil required for a given service is reduced. (3) A light or inferior quality of oil may be used for a given service. (4) Water under favorable conditions may serve as a sufficient lubricant. (5) Only a small amount of graphite is needed. (6) Too much graphite thickens oil and causes internal friction. (7) The benefits derived from the use of graphite persist long after its application has ceased. (8) The supply should be constant, though small, for best results."

In the tests made by Professor Goss of Purdue University, the Dixon Pure Flake Lubricating Graphite was used.

LUBRICANTS IN COLD WEATHER

With the change in temperature there is always a corresponding change in the condition of lubricants. In summer, oils and greases have a tendency to escape from the bearings, but in the winter they congeal and sometimes the greases become almost too hard to be serviceable.

On railroads running north and south it has been found necessary in cold weather to use thinner oils and greases than are used in the summer, especially after the train arrives far enough north to be influenced by the cold weather.

The best safeguard against trouble with bearings is to have them properly treated with flake graphite. When the habit has been formed of occasionally introducing a small quantity of Dixon's Flake Graphite, the bearings become covered with a veneer-like coating of graphite of marvelous smoothness and endurance and when the oil or grease fails to feed or fails to flow with the usual supply, there is less danger of the bearings overheating or of being cut.

The peculiar advantage of Dixon's Flake Graphite over any other form of graphite is in the extreme thinness of flake. The thin flakes of graphite become pinned to the microscopical irregularities of the bearing surfaces and form the veneer-like coating mentioned above. When the thin flakes of graphite are thus pinned to the surfaces there is no danger of the flake graphite flowing out with the oil, as any other form of graphite is liable to do.

SOMETIME ago we sent samples of the Dixon Automobile Lubricants and the other day we wrote to find out how they were working. We received the following letter:

"In reply to your letter of the 23rd. last, I am pleased to say that the graphite grease was received and I am using same. I think this grease is the best I have used. It takes about half the quantity that others do and I am sure that the results are better.

"Thanking you for the above, I remain,

"I HEAR, doctor, that my friend Brown, whom you have been treating so long for liver trouble, has died of stomach trouble," said one of the physician's patients.

"Don't you believe all you hear," replied the doctor. "When I treat a man for liver trouble, he dies of liver trouble."

—*Everybody's Magazine.*

A FEW products, like some men, are either born great, acquire greatness or have it thrust upon them. But unlike any man or any other product,

Dixon's Flake Graphite

"The World's Most Perfect Lubricant"

is great in all three ways. Its wonderful lubricating qualities were as efficient over half a century ago as they are now. Its recognition has been won through service of the severest kind in almost every field of industry. And today it is used and recommended by both the highest and most humble authorities throughout the world.

If you are interested in problems of lubrication and do not possess a copy of "Graphite as a Lubricant," you are being neither fair to the engine or machine you own or run, nor to yourself. Write today for copy No. 190-C.

Joseph Dixon Crucible Company

Jersey City, N. J.

GRAPHITE

VOL. XIV.

FEBRUARY, 1912.

No. 2.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

A GREAT WANT SATISFIED

It has been well said that everything in the world is the result of a want. Nothing makes a man sharper or sets his hands and wits more at work than want. It was want that made the bow and arrow, and want that improved the weapons of offense and defence. It was want that taught man to conquer and ride the wild horse, and it was want that brought about the locomotive, the automobile and the aeroplane.

With the development of high speed and great power machinery, there came a want of something that would insure better lubrication—something more solid and enduring than oils or greases—something that would help the oils and greases to better do their work. Many things were tried, including soapstone, sulphur, mica and graphite. The

various forms of graphite were found more satisfactory as a lubricant than any other solid substance, but it was only with the advent in the market of the wonderfully thin flakes of Dixon's Ticonderoga Graphite that engineers and master mechanics felt that the problem had been successfully solved.

It is because of the form of the Ticonderoga graphite that makes it of peculiar and unequalled value. The Ticonderoga graphite is not superior in purity to the choicest foliated graphite that comes to us from Ceylon, which is the natural home of graphite and from which the vast supplies of graphite come which are used for the manufacture of crucibles, stove polish, facings and other products, but it is far superior as a lubricant because of its purity and thinness of flake.

The Ticonderoga graphite consists of flakes of extreme thinness and endurance. These thin flakes become pinned to the microscopical irregularities of the bearing surfaces, forming a surface of far greater smoothness than can be obtained by any process of machining or hand work.

If we are to follow good examples in the matter of lubrication as we do in other matters, it may be well to know that the superintendents of motive power and the master mechanics generally of all the great railroads and industrial plants would not think of doing without Dixon's Flake Graphite. Such men are always the first to recognize and to adopt anything of quality and value.

DIXON'S graphite publications sent free upon request.

USE WHAT THE EXPERTS USE

It is a pretty safe rule to follow the man who knows. If you wanted to know what gun to buy you would get just about the right gun if you were to select the one that the experts used for that particular kind of game.

If you were to take up the game of golf you probably would find good results if you made use of the same materials used by some expert golfer.

If you were to take up the game of hockey and expected to negotiate the ice safely and skillfully and get there with the rest of the boys, you would not fail to make use of the best quality of hockey skates.

In the matter of lubrication it is an equally safe rule to follow those who are unquestioned experts—the thousands of able, skillful and successful railway engineers. Go where you will throughout the country and ask the engineer whose business it is to drive his mighty locomotive and make time; he will tell you that one of the most important things carried in his cab is a can of Dixon's Flake Graphite.

SMOOTH TALK AND FACTS

A powder manufacturing company that had long made use of Dixon's Ticonderoga Graphite in glazing its powder, was induced to place an order with another graphite company because of reduced price and "smooth talk."

After thorough trial and "considerable annoyance" the Dixon Company again have their orders with the assurance that Dixon's is best adapted for their work and "in the future will be our standard."

LITERATURE AND COMMERCE

It is a popular though mistaken impression that literature and commerce mix about as much as oil and water and that the two have little or nothing in common. We have felt in the past few years the latent power of a force which has done more than anything else to advance our standard of civilization. Public opinion found its greatest expression in the press and the press has grown only in direct proportion to the development of advertising. It is a well known fact that no newspaper or magazine can be published at a profit from the revenue received by its subscriptions. It is equally true on the other hand, that the advertising value of a periodical depends almost entirely upon the appeal of its reading pages. Thus we see the writer and business man united on common ground, each securing his own success and both helping the public to realize a better recognition of its will.

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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Vice Pres. & Counsel—WILLIAM H. CORBIN
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Secretary—HARRY DAILEY
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PHILADELPHIA SALESROOM, 1020 Arch Street.
SAN FRANCISCO SALESROOM, 145 Second Street.
CHICAGO OFFICE, 1324 Monadnock Block.
BOSTON OFFICE, 648 John Hancock Building.
PITTSBURG OFFICE, Wabash Terminal Building.
ST. LOUIS OFFICE, 501 Victoria Building.
WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
BALTIMORE OFFICE, 1005 Union Trust Building.
BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

PROPER LUBRICATION PAYS

We read in *Motor Print* that not long ago a manufacturer was negotiating for the purchase of a thirty horsepower electric motor to operate new machinery which his plant had found it necessary to install. The engine running the remainder of the machinery was already worked to its greatest capacity, or at least so those in charge believed. At this juncture an expert was called in. By simply changing the lubricants he got more than fifty horsepower over the former limit from the original engine. Not only did he save the purchase of the new motor, but actually reduced the yearly cost of lubricants by fifteen per cent. In a cotton mill there was a similar experience, when one department found that it would be necessary

either to install a new engine of greater power or add an electric motor to the present equipment. By the substitution of better lubricants, intelligently selected and used, the extra load was handled by the old engine.

The above reminds us that some years ago an engineer of a freight train told us that he could haul an extra car over a certain heavy grade if he used Dixon's Flake Graphite in his engine cylinders, and could not without it. We are also reminded that the superintendent of a sugar plantation told us that one year when he had an extra crop to grind, that it was only by the use of Dixon's Flake Graphite that he was saved the expense of putting in an extra engine. His experience resulted in the constant use of flake graphite on the bearings of all plantation machinery under his care.

RECOGNIZED DISTINCTION

The caption above may well be applied to Dixon's Ticonderoga Flake Graphite. It is not so many years ago when the idea of graphite lubrication was comparatively unknown. There were only a few who were enthusiastic and who believed that a pure, thin, tough, flake graphite would solve many problems in lubrication that were coming to the attention of engineers.

The few who believed did their best to make the lubricating value of flake graphite known throughout the world. There were able experts like Professor Thurston, Professor Goss and others who lent the great weight of their names and interest to the promotion of the idea of flake graphite, and it was Dixon's Ticonderoga Flake Graphite that was taken as the standard for graphite lubrication.

It is only about twenty-five years ago when the Dixon Graphite Mine, then but a small hole in the ground, was worked only about three months in the year. Today the same Dixon Graphite Mine extends for a mile under the ground from the mouth of the tunnel, and has many ramifications. It is worked for the entire twelve months of the year and a great deal of the time it has two shifts running, the men working ten hours in a shift. Today Dixon's Ticonderoga Flake Graphite is known throughout the entire world.

UNION UTILITIES COMPANY.

MORGANTOWN, W. VA., Jan. 13, 1912.

Joseph Dixon Crucible Company,
Jersey City, N. J.

DEAR SIRs:—About the last of September, the above company ordered three dozen direct current generator brushes. These were received in due time and put to work. I find that these brushes are the best I ever used and I have tried several well known makes. They require so little attention, are self-lubricating and noiseless and I recommend them whenever I can.

A few days ago, I gave a requisition for 100 of these same brushes which I hope you will fill with care and with the same kind of brushes, *i. e.* quality, size and shape.

Thanking you for past favors, I am,

Yours very truly,

CHAS. E. NIGH, Chief Engineer,
No. 8 Arlington Ave., Morgantown, W. Va.



JOHN LINCKS—VETERAN DIXONITE

Like a great oak that grows from a little acorn, the Joseph Dixon Crucible Company continues to grow from the spark of genius, transplanted from the remarkable brain of its founder. As the leaves of a tree fall one by one—nature's way of insuring a sturdy growth—so have the men who grew this huge Dixon oak passed one by one to where they might watch others continue the work they did so well.

This ruthless process of elimination is not without its saving grace; for some men, like leaves, remain to tell the story of earlier days, and so it is with the Joseph Dixon Crucible Company, for there's one, at least, to connect an intimate personal recollection of the Dixon Company and its founder with an equally intimate knowledge of its present day personnel and its rank as the largest concern of its kind in the world.

Lacking, in appearance, many of the years Father Time has checked against him, John Lincks thus naturally surmounts the barrier between a discreet memory and some interesting reminiscences. He is today, as the sage of East Aurora would say, sixty-four years young.

John Lincks is a factory boss of the Joseph Dixon Crucible Company, the company in which just two score and ten years ago he began work as an office boy. No one is qualified to dispute the undoubted capability and good deportment of John Lincks as office boy. Certain remarks, however, have led us to suspect that this fourteen year old lad who chased mail and performed the various other duties usually allotted to the genus, was not so very much unlike his host of successors, and indeed if the truth be told we believe he was a little more so—with which ambiguous remark we go back, in explanation, to the time when Mr. Dixon, who then seldom remained long at the factory, unexpectedly arrived upon the scene in time to view his youthful employee comfortably reclined and reading one of the thrilling detective tales of that period.

Upon being asked what he was doing, John with inherent truthfulness, aided by a certain amount of confusion, replied that he was "doin' nothin'" and Mr. Dixon, quick to appreciate the humor of the situation asked, "Well, who's helping you?" This incident apparently squelched any literary career John had in mind, for ever afterwards he has been known to stick closely to his last. Though he afterwards acquired great proficiency as a pool player and became thoroughly accomplished in many other games of which he cautioned us against mentioning, Mr. Lincks has never allowed his expenditures to exceed his income. Today he enjoys the security afforded those who make some provision against the future and his real estate acquirements serve as a protection to both himself and his sister, with whom he has lived since the death of his wife several years ago.

Among the pleasurable duties to which John Lincks, as office boy, looked forward, were the weekly trips, on Saturday afternoons, from the factory to Mr. Dixon's home, bearing the latter's weekly account, for upon these occasions it was Mr. Dixon's custom to hand out whatever small coin he had in his pocket to the expectant messenger and it mattered not whether the coin was a huge copper penny or a silver half dollar, it was given without thought to its value.

Mr. Linck's birthplace was located upon the present site of the Dixon factory, a fact which recalls to mind the old time one story building which then constituted the Dixon works where crucibles were made by hand. The appearance of this building would be most insignificant if contrasted today with the immense buildings that have replaced and surrounded it. Mr. Lincks was a pall bearer at the death of Joseph Dixon, which occurred in 1869, and his memory of the founder of the Dixon Company is singularly distinct and rich with many of the characteristics of that many-sided man.

We doubt if there are many records that equal the splendid service rendered by John Lincks. It is an inspiration to both employees and employers and while the Dixon Company is noted for the number of its long service employees, none have reached the half century mark as has John Lincks. Such a service is a silent though eloquent tribute to the mutual appreciation that has been an existing condition in the Dixon Company for many years. Mr. Lincks' remarkable anniversary, a golden wedding to work, was fittingly recognized by the Joseph Dixon Crucible Company, when at its January meeting of the board of directors a resolution was passed to present him with one hundred dollars in gold.

JUST A CHASER

In January GRAPHITE we appropriated the initials of Mr. L. M. Chase, of our Buffalo office, and grafted them to the name of Mr. J. P. Chase, of our Atlanta office. Mr. H. W. Chase, of our home office, noted this operation—hence this correction.

Two London cabbies were glaring at each other.

"Aw, wot's the matter with you?" demanded one.

"Nothink's the matter with me, you bloomin' idiot."

"You gave me a narsty look," persisted the first.

"Me? Why, you certainly 'ave a narsty look, but I didn't give it to you, so 'elp me!"—*Everybody's*.

FROM THE EDITOR'S VIEW

It is our custom to annually contribute to the peace of mind and general happiness of certain editors by presenting to them, at Christmas time, an assortment of Dixon's American Graphite Pencils.

In acknowledgment of our effort to ease the many exacting editorial tasks of 1912, we have received so many kind expressions of good will and appreciation that we simply cannot refrain from an anonymous use of certain portions of them.

"The Christmas box has come and has been and will be really enjoyed by all the members of the staff, for it is just like everything else done by the Joseph Dixon Crucible Company, excellent and gratifying."

"I beg to acknowledge receipt on this date of an express package from you, prepaid, and which contains a complete assortment of lead pencils and erasers. Surely, 'tis such little touches of human kindness and thoughtfulness that makes our faith in poor fallen humanity stronger than ever. I am sure that every editor receiving one of these gifts will feel as I do about it, that it is the message that goes with it, and not merely the intrinsic value of it, that makes the gift a pleasure. For the message with any gift is love. One loves to be remembered, and surely we will remember the Joseph Dixon Crucible Company all through 1912. Very few remember the poor editor by a little reminder of appreciation. If it's only a desk calendar, it shows he is not forgotten in the hurly-burly of trade. And now it is up to me to remember any who are serving me in any way. I'll do it, too."

"At daylight Santa Claus dropped in here on Tuesday and left a very useful little gift. He said it came from you.

"We appreciate the thoughtfulness that prompted you to send this gift and we expect to make excellent use of it. We shall use the black pencils to jot down our thoughts and the rubbers shall be employed in erasing the irrelevant and immaterial ones. As is our wont we shall apply the blue pencils vigorously—on all copy but yours."

"I am in receipt of a package, well stocked with the implements that are necessary to the furnishing of the "desk editorial." For your thoughtful consideration I am grateful, to which I may and do add the remark that these things will be used to the very end—stub or whatever else may be the proper terminal to describe their finish.

"Meanwhile let us express the wish that your great house will go on to still greater things; and I write as one who knows something about its history, for in the earliest '70's I had occasion to know a bit about you. In those days I was the printer's devil, carrying proof between the office and our late editor-in-chief, who frequently did analytical work for the founder of your house.

"Wishing you all the best of good luck, I am,—"

"From all along the editorial line we send thanks to you for the boxes of Dixon's American Graphite Pencils which have come with your New Year's wishes. The writer's long use of the Dixon pencils makes him believe there is somewhere along that core of graphite an aid to the flow of thought.

"With this go our wishes for your continued success."

"The members of the editorial staff unite in this acknowledgment of your kindness in sending the box of "tools of the trade," which arrived safely. The pencils have been dis-

tributed among them with your good wishes and they join in wishing you a happy and prosperous new year."

"We beg to acknowledge the holiday box of pencils with which you have again reminded us, and to express our appreciation of them. We have come to look forward to the receipt of these pencils from year to year and they are always greatly enjoyed and have done more to impress us, and the many users of pencils associated with us, of the Dixon standard of quality than anything else that you could possibly have done."

"To express my appreciation of the New Year's box of pencils, received this morning. In our editorial rooms Dixon's pencils aid us in our work. On board our motor boats Dixon's Graphite helps to make enjoyable our hours of play."

"I wish to acknowledge receipt of the box of pencils, sent with your compliments and appreciate very much being remembered in this connection.

"If I can develop ideas in keeping with the diversity of the assortment and its usefulness, I can look forward to naturally increasing my influence.

"Again thanking you for your remembrance and wishing you the compliments of the season, I am,—"

"We wish to thank you for both the express package and the message which reached us yesterday, and to assure you that it is heartily appreciated.

"May the coming year flow as smoothly as words from the point of a Dixon S-M Pencil. Could we wish you more?"

"Your recurring courtesy in the matter of a box of pencils at this season of the year is greatly appreciated by the writer, who, during 1912, will be glad to utilize them in connection with the discharge of his editorial duties."

"We thank you most heartily for the splendid gift of a box of assorted pencils and erasers and we join with you in the hope that editorial smoothness will be the happy result.

"Their constant use will be a daily reminder of your kindness."

"Accept our sincere thanks for the box of Dixon's American Graphite Pencils and your New Year wish received recently. These will assist materially in relieving the "grind" of editorial work. The Dixon Pencil has been in use in our office to considerable extent already."

"I was greatly delighted to find in my mail this morning a box of pencils. This is one of the New Year gifts which I always look for and hope to get.

"I wish to take this opportunity of thanking you people for your long and generous support and to add that if at any time I can be of service, I beg that you will command me."

"The black mark which we are enabled to make against you is of your own seeking, but we shall insist on making it shine against a pure, white surface. Your kind remembrance adds pleasure even to children of a larger growth, in which form we hope you will be found with us.

"Again with our best wishes, we are,—"

"Kindly permit us to express our most grateful acknowledgment of the courtesy extended. In the preparation of that charming box of pencils, you seem to have understood absolutely the requirements of the editorial desk. The use of your pencils will certainly impart not only smooth writing quality,

but will also conduce to smoothness of temper and naturally smoothness of diction."

"We are in receipt of your very welcomed Christmas remembrance—a box of the unexcelled Dixon Pencils. We assure you that nothing that Santa Claus brought to us this year will be used oftener nor to better purpose than these same pencils."

"In my capacity as editor, I wish to acknowledge receipt of a box of editorial pencils as of yore, from the Joseph Dixon Company."

"I certainly thank you for keeping me so well supplied with the best brand of a necessary article, and hope their "smooth" qualities will prove infectious—at least to a reasonable extent."

"Wishing everybody in the Dixon Company a happy and prosperous New Year, I am,—"

"The contents of the little box bearing your New Year's wish, we are sure, will serve as a constant reminder of your kindness and good wishes."

"This letter is to express our thanks for your kindness in sending us the bunch of very useful pencils. A special reservation has been put on these for the use of the editors and we hope they will produce some good copy throughout the year."

"Please accept our thanks for the annual editor's box of pencils, which we appreciate not only for utilitarian reasons, but principally for the spirit which prompts such a kindly holiday remembrance of the pencil wielder."

"To say that you are most liberally disposed is putting it very mildly. We assure you this was appreciated by our entire office force and it will be a pleasant reminder of the high qualities of your products."

"We appreciate the pencils very much indeed. They will help to remind us frequently during the coming year of the Joseph Dixon Crucible Company with which this company has always had cordial relations, and for which the president of this company always seems to have a special regard."

"Whenever anything comes up in the way of "lead pencils" or anything which may interest the Joseph Dixon Co., our president seems to think that there is nobody else on earth but your concern and while the writer does not know just exactly what the reason for this may be, still it is sufficient for the time being and we are glad to know that we are on your list."

"This was indeed a very fitting Christmas greeting."

"We have received these pencils so many years that it would hardly seem like Christmas without them."

"We also appreciate the little note in the corner of your Christmas card, although we can't feel that all gifts are restricted to 'The Fourth Estate.'"

"Wishing you a happy and prosperous New Year."

"May things go as smoothly with the Joseph Dixon Crucible Company during the coming year as the writing of a graphite pencil."

"Now that we have a good supply of Dixon's Pencils there will be no excuse if our editorial work during the coming year is not of a high quality."

"We appreciate very much the courtesy extended and will certainly make good use of your seasonable remembrance."

"The Dixon Pencils are always on our desk as well as in use in our homes."

"Allow me to congratulate upon the fact of your coating most all the steel that goes into buildings in this section, which must have grown to enormous proportions as a business with you."

"We beg to acknowledge receipt of box containing a complete editorial outfit, for which please accept our thanks."

"Wishing you a prosperous New Year, we are,—"

"Accept thanks for your kindly remembrance of Dixon's Pencils which will be used, of course, with your company always in mind."

"With the compliments of the season, we are,—"

"Especially do I appreciate your kind remembrance."

"We know that Dixon's Pencils will smooth some of the difficulties that beset our editorial efforts and whatever improvement is shown in our columns during the new year, must certainly be credited to the product for which the house of Dixon is famous."

"Wishing you a prosperous New Year, we remain,—"

"I shall continue to recommend Dixon's Pencils as I have long and conscientiously done, as the most satisfactory articles of their kind that I know."

"The usual box of Dixon Pencils finds the ever ready welcome; in full appreciation of your courtesy, and, wishing the Dixon Company and all of its ramifications a happy and prosperous New Year, we are,—"

A CLEVER LETTER

Which Shows the Patience of the Dixon Company and its Diplomatic Way in Handling its Correspondence and the good Results that come from such Conduct

The following letter, which comes to us from one of our customers, will fully explain itself without further introduction, and will point its own moral.

"Was it not a wise provision of Providence to endow mankind with the faculty of hope? Else long since you would have grown weary expecting to hear from us with a remittance covering our long past due account. In explanation of our conduct in the matter, will state that business activity has not been such for the past few months as to burden our coffers, and since the first of the year, weather conditions have almost been prohibitive to business. Hearing of these facts, will you do us the generous act to pardon our apparent negligence, and accept this remittance with our best wishes for a prosperous year's business."

"AUTOMOBILE TOPICS"

calls attention to the dangers that lurk in some lubricants. It quotes from the report of the government chemist who has been making an investigation of the effect of fatty acids.

Possibly lubricants containing fatty acids may not always be avoided, but if Dixon's Flake Graphite is used in connection with such lubricants, the bearings will become covered with a veneer-like coating of graphite which will largely, if not entirely, prevent any injurious action of the acids present in oils or grease.



WILLIAM J. COANE

Who in the stationery trade throughout the United States, and we may further say, who that has had anything to do with graphite products, has not heard of Mr. Wm. J. Coane, the late manager of the Philadelphia Branch of the Joseph Dixon Crucible Company?

In making use of the word "late," we do not wish in any way to convey any meaning other than that Mr. Coane is no longer manager of that branch; he is not dead, but very much alive.

We are told that really good men are scarce, and that wise and far-seeing business men are always on the look-out for good men and never consider the price which they may be obliged to pay.

It has been so with Mr. Coane. His business methods, his executive ability, his powers of organization and his personal conduct, have been carefully observed and noted when he least thought he was under observation, with the result that he has been singled out by the Ajax Metal Company and offered the position of second vice president of that company and its general sales manager at a salary so large and with a promise of a future so promising that Mr. Coane felt obliged to open the door at which opportunity was so loudly knocking.

Mr. Coane leaves the management of the Dixon Company with the deepest regret, and with the regret but best wishes of every one connected with the Dixon Company.

As a mark of appreciation by his own staff, which consisted of twenty-seven men, a farewell dinner was tendered him on January 13th, at which time a beautiful loving cup was presented to him and loving talks made that Mr. Coane will recall with pleasure all the days of his life.

On January 16th, Mr. Coane assumed his new official position as second vice president and sales manager of the Ajax Metal Company of Philadelphia, famous for its metal products. On the evening of that day at a meeting of the Philadelphia Stationers' Association, Mr. William H. Brooks, president of that association, made the following address:

"We have in our association, and present this evening, a gentleman whom it is hardly necessary for me to introduce—one whom we esteem highly, and whose example we might profitably follow. He is a modest man, but he does not make this claim himself. It is accorded to him by every member of the association. He is responsible, to a very large extent, for any success the Philadelphia Stationers' Association has

achieved. When it was thought proper to form this association, several movements were made in that direction, but they did not crystalize into a successful conclusion, until the gentleman in question took hold of the proposition.

"This gentleman has been associated with the Joseph Dixon Crucible Company for a term of twenty-six years. He has "stuck" by this one company, has succeeded, and has accomplished big things as manager of their Philadelphia office. He leaves, or has left, the Dixon Company to connect himself in an official capacity high up, with another large reputable concern. These people recognized his worth as we have recognized it.

"This gentleman is a friend of every man in this room and we are all going to miss him. He has always brightened our entertainments by his charming manner, his delightful talks, and his thoughtfulness for every man in the association. It was my pleasure this evening, at a meeting held after the dinner, to entertain a motion to elect him an honorary member of this association, the first such member, I believe, that we have on our rolls. Therefore, we are not going to lose him; we could not afford to lose him, and we sincerely hope that he will frequently grace our banquets and meetings with his presence. It is an unusual thing, gentlemen, to be sought for, as he has been, and to be singled out for such a position as second vice president of the Ajax Metal Company, and I know that we all wish him well in his new venture.

"The Philadelphia Stationers' Association has prepared a little remembrance for this gentleman, in the shape of a silver vase, which we are going to present to him, and the inscription on which reads as follows: 'Presented to William J. Coane, January 16th, 1912, by the Philadelphia Stationers' Association in appreciation of his services in its behalf, and with best wishes for his future success.'"

Turning to Mr. Coane, Mr. Brooks continued: "I take great pleasure, Mr. Coane, in presenting to you this vase as a token of our personal esteem and regard and of our appreciation of your services to this association."

To which Mr. Coane responded as follows:

"This is a very beautiful sentiment. When a man ascends in years, he can look backward over the sands of time, and, in the future, when I have occasion to review the past, one of the brightest spots in my recollection will be this occasion and your kind remembrance of me. At the same time, to-night, to me, is a blend of the bitter and the sweet. It is very sweet to me to remember the many pleasant years of personal friendship and association that I have enjoyed with the members of the Stationery Trade of the city of Philadelphia. It is pleasant to remember the success of The Philadelphia Stationers' Association, its co-operation with the National Association, and the benefit that it has been to the stationery trade, as a whole. On the other hand, it is bitter to me to realize that to night is the last night I will meet with you as a member of the Stationery Trade, and that my new connections will take me in beaten paths that will necessarily prevent me from coming in contact with you as frequently as I have in the past. I have lived long enough to know and appreciate the value of friendship, and I have resolved to find some way to cling to the old, warm friendships with the members of the Stationery Trade, that I value so highly.

"Gentlemen, this is leap year, and I have made a leap while crossing the line into the new year. As president Brooks has stated to you, I have been connected with the Joseph Dixon Crucible Company for over twenty-six years, and I received an offer from another old, well-known company, which, after weighing both sides of the proposition, I decided to accept. A change of this kind required nerve, and, to a certain extent, I am launching myself on unknown seas, swinging away from the old moorings and my old friends. I have made my choice, and my future will depend upon what I do with my opportunity.

"I have been dubbed 'The Father of the Philadelphia Stationers' Association.' It has not been a painful thing, and it has not been any load to carry; in fact, I have felt rather young under this title, when I have recalled that I am a grandfather, with two grandchildren. Gentlemen, your kind remembrance, in the form of this vase, has sort of awed me, and I do not think that I can really do this occasion justice. I am very much touched, indeed. My connections with the Philadelphia Stationers' Association have been exceedingly pleasant and anything that I may have done to further the interests of the association, has not been in the nature of work, but has rather been a sincere pleasure. And I wish to state that I will cherish this cup, not as a mark of anything that I have done, but as a mark of your generosity and friendship; and, in conclusion, I desire to wish to you, personally—all of my friends here to-night—long life, health and prosperity, and to the Philadelphia Stationers' Association great success in the future."

Mr. Coane has been fortunate in his friends and in his friendships. He has believed in himself and he has believed in his friends, and no man can do anything worthy unless in a certain way he does believe in himself. If a friend loves you he must see something in you that is lovable. Friendships give us moral power; we become worthier because we have friends. Furthermore, friendship is an intellectual inspiration. A man can work better because he has a friend. Friendship makes it easier for us to believe in the spiritual facts and forces of the world. It has been well asked "What Is Friendship?" It is not money, not a street, not a house, not a carriage, not a social position. It is none of these material things. It is invisible, it is spiritual, it is divine; and yet it is the mightiest thing in the world. The *esprit de corps* of the Joseph Dixon Company has always been something to be proud of. That spirit possibly was founded by our late vice president Mr. Walker, who himself was such a good friend, and who was so fortunate in making lasting friendships.

"The heavy mists trail low upon the sea,
And equally the sky and ocean hide,
As two world-wandering ships close side by side
A moment loom and part; out o'er the lee
One leans, and calls, 'what ho!' Then fitfully
A gust the voice confuses, and the tone
Dies out upon the waters faint and lone,
And each ship all the wide world seems to be.
So meet we and so part we on the land:
A glimpse, a touch, a cry, and on we go
As lonely as one single star in space.
Driven by a destiny none understand,
We cross the track of one 'twere life to know,
Then all is but the memory of a face."

ANOTHER TRIBUTE FROM THE PACIFIC COAST

In January GRAPHITE we mentioned our purpose of reproducing from month to month letters written by the motor car experts of the Pacific Coast.

Our series of letters represents a most remarkable consensus of opinion, and this splendid recognition of Dixon's Motor Lubricants is all the more pleasing since it comes from a section of the country whose active interest in motor cars is at least as great, if not greater, than any other part of the country.

This month our letter is from Mr. Dave Lewis, a man who has established a national reputation as a driver. Mr. Lewis says:

LOS ANGELES, CAL., October 19, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—The Stutz Car driven by the writer in the Santa Monica Road Races, was a new car fresh from the factory and therefore stiff.

I first put your No. 677 Graphite Lubricant into the transmission and am pleased to state that, without making any other changes in or on the car, this changing of grease alone increased the speed of my car in the next morning's tryout three miles per hour. I afterwards put your No. 677 into the differential and Dixon's Graphitoleo on my wheel spindles, with equally good results.

The car was driven in the two races 353½ miles at an average speed of 71 4/10 miles per hour.

Upon examining the pinions after the race, they showed not the least wear, were bright and shiny and looked more like glass than metal.

I am thoroughly convinced of the merits of the Dixon Graphite Lubricants and will both use and recommend them in the future.

Yours truly,

(Signed) DAVE LEWIS.

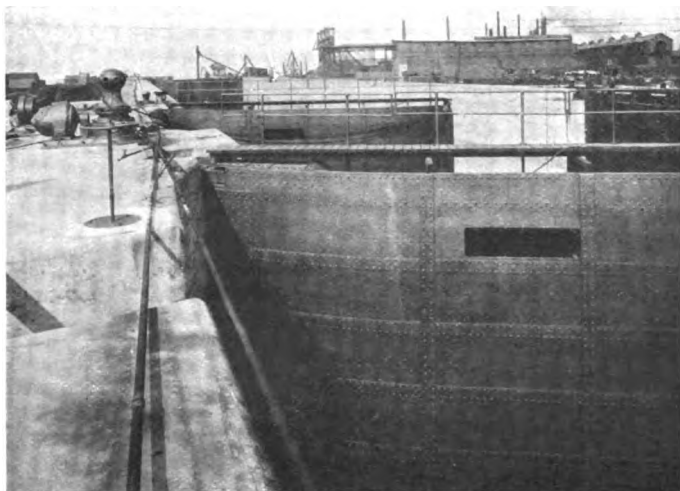


WE ARE very much pleased to acknowledge receipt of letter, entirely unsolicited, from one of our very good customers, Messrs. Mayer & Reichert, 84 to 90 Evergreen Avenue, Brooklyn, New York, who are manufacturers of gas cocks, brackets, gas and electric fittings, etc. They write as follows:

"We have been using Dixon's Crucibles for the last seven years and have found none to equal them. We have received as high as forty to forty-five heats out of one pot. We consider Dixon's Crucibles the best in the market."

WE READ that the "trainometer" is the latest. If you are on a train and you are curious to know how fast you are going, you put a penny in the slot and the hand on the dial informs you. By the "penny" we see that it is an English invention, which has not as yet been adopted in the United States.

POWER flows to him who can use it, more power flows from the engine on which Dixon's Flake Graphite is used.



GOVERNMENT SHIP LOCKS AT BLACK ROCK HARBOR AND CHANNEL, N. Y.

What are considered the largest completed ship locks in the world were erected recently for the United States Government, by the Buffalo Structural Steel Company, under contract with the Lathbury-D'Olier Engineering Company of Philadelphia.

These locks, which are located at Black Rock Harbor and Channel, N. Y., were designed under the supervision of Col. W. L. Fisk, Corps of Engineers, U. S. Army, by J. C. Quintus, Assistant Engineer. To our readers who are not familiar with this work we may state that the locks consist of upper, intermediate and lower gates and that this tremendous undertaking cost Uncle Sam over a million dollars. The gates and valves are operated by electrical power received from the Niagara Falls Power Company.

Approximately seven hundred tons of steel were required to build the huge gates, and some idea of their size may be obtained from the accompanying illustrations. Dixon's Silica-Graphite Paint was used to protect the steel contained in these locks and this fact is only another instance of how highly Dixon's Paint is regarded in the minds of those who know and are responsible to the United States Government.



GRAPHITE PAINT ON WOODWORK

We have frequently stated that Dixon's Silica-Graphite Paint is a most excellent protector for exterior woodwork, factory buildings, city and country houses, fences and shingle roofing, etc.

As a further evidence of its durability, we are glad to quote the following testimonial from Mr. W. H. Wakeman of New Haven, Conn., the distinguished steam engineer and author of engineering articles.

NEW HAVEN, CONN., December 29, 1911.

*Joseph Dixon Crucible Company,
Jersey City, N. J.*

GENTLEMEN:—Having become disgusted with the so-called white lead paints on the market, I painted my house about one year ago with Dixon's Silica-Graphite Paint, Dark Red. I used a pure white paint for the trimmings, and now have the best looking house on the street. I gave it but one coat, which seems to be sufficient for all practical purposes. I had already tested this paint on woodwork and it gave excellent satisfaction.—(Signed) W. H. WAKEMAN.

MIXTURE FOR PIPE JOINTS

We read in *Steam* that for ordinary pipe joints a mixture of plumbago and vaseline has been recommended as being better than white lead, as this mixture does not dry out and the joint is separated when needed.

The Dixon Company has for many years prepared a graphite pipe joint compound which experience has demonstrated to be an almost ideal material for the making up of joints of all kinds. Many steam fitters and machinists, however, rely more upon the graphite than upon the vehicle to which it may be added, and, therefore make use of Dixon's Flake Graphite and any good grease or heavy oil.

YOUR letter of August 31st at hand; the first of this year we let contract for painting in and out our standpipes, specifying Dixon's Silica-Graphite Paint. Same was used, purchased from local dealers, Garlock-Utter Company. When completed we believed we had as perfect a job as could be done, and today will say we would use *only* Dixon's for like work, having utmost confidence in material and makers.

With best wishes, I am,

W. H. KELLEY, Supt.,
City Water Works, Newark, N. J.

Two young women went to the matinee. They could not get seats together, but were told at the box office that each could have an end seat, center aisle, in adjoining rows, and most likely somebody who came alone and had a chair next to one of them would obligingly exchange seats. Near the close of the first act, one of the young women timidly whispered to a heavy, middle-aged man at her side, who had been sitting stiffly and looking straight ahead:

"Are you alone, sir?"

The man buried one side of his face in his program and breathed:

"Sh! Wife."—*Everybody's Magazine.*



THE above reproduction must serve for the present as an introduction to Mr. Walter G. Stringer of the Philadelphia office of the Joseph Dixon Crucible Company. Mr. Stringer succeeds Wm. J. Coane in charge of the Philadelphia office. Mr. Stringer may look back upon fourteen years of service for the Dixon Company as a proper training for his present position.

LONG SERVICE RECORD OF DIXON'S SILICA-GRAPHITE PAINT IN HAWAIIAN ISLANDS

In the November issue of GRAPHITE there was published an illustration of the Pioneer Mill, La Haina, Hawaii. Dixon's Silica-Graphite Paint has been found an ideal protector for steel and iron in the trying climatic conditions of the tropics where great heat prevails, and where there is much dampness and heavy rains in the rainy season. Dixon's Silica-Graphite Paint has given great satisfaction in the Hawaiian Islands, the latest commendation therefrom being the following:

HILO, HAWAII, July 31, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—The smokestacks, roof and iron work of the mill of the Hawaii Mill Company, situated at Hilo, Hawaii, were painted fifteen years ago with Dixon's Silica-Graphite Paint and are in splendid condition today.

Respectfully yours,

(Signed) T. O. WILSON,

Chief Engineer.

For the information of those who may not possibly know, we will say that Dixon's Silica-Graphite Paint contains in the way of a vehicle double-boiled linseed oil only. The pigment

is silica-graphite; the silica provides tenacity and resistance to abrasion and the Ticonderoga flake graphite is the ideal pigment for shedding dampness and rain and for resisting peeling or scaling.

VETERANS TOGETHER

LOUISVILLE, KY., Nov. 6, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—It has been a long time since I have seen a copy of GRAPHITE. I was looking over my trunk today and at the very bottom I found a copy of GRAPHITE of November 1905, containing an article by me, headed, "A Texas Missionary," written while I was in the employ of the G. C. and Santa Fé R. R. at Sangor, Texas. About one year ago I was pensioned by the above company and am now living in Louisville. I have much time to read and would appreciate GRAPHITE on my list. I am sixty-nine years old and have been using graphite for forty years and have been singing its praises all that time, and will continue to do so until "Gabriel blows his horn." I used it in the navy in the Civil War forty-eight years ago.

I want you to send me GRAPHITE regularly from now and send me a couple of copies, September and October, if you have them. If there is any charge for papers please state and I will remit.

Yours truly,

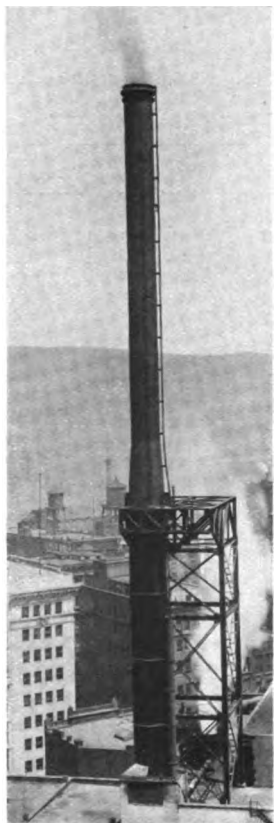
A. H. GOFF.

Mr. Goff is an enthusiast about flake graphite and has written us many times during past years concerning his experiences with it.

He was an acting assistant engineer aboard the monitor Chickasaw at the famous battle of Mobile Bay, August 5, 1864. During that engagement the Chickasaw took a leading part in the fire directed against the Confederate ram Tennessee, and finally succeeded in cutting one of her rudder chains, thus rendering her entirely helpless. The Tennessee was soon afterwards forced to surrender and the battle, which had lasted three and a quarter hours, was ended. Mr. Goff was in charge of the boilers and pumps of the Chickasaw and handled them in so able a manner as to be cordially greeted by Admiral Farragut when he came aboard the Chickasaw after the battle to thank Captain Perkins and the crew for their gallant work done at close quarters with the ironclad Tennessee. Mr. Goff states that during the fight the thermometer in the engine room, within six feet of where he stood, indicated 156°. He can truthfully be said to have had "a hot time in Mobile Bay."

IN "A Dirge," written by the Rev. George Croly, an English clergyman, born in 1780, are the following thoughtful lines.

Earth to earth and dust to dust!
Here the evil and the just,
Here the youthful and the old,
Here the fearful and the bold,
Here the matron and the maid
In one silent bed are laid;
Here the sword and sceptre rust—
Earth to earth and dust to dust.



UNIQUE SMOKESTACK ON OLIVER POWER PLANT

There was, a few months ago, completed for the Central Power Plant of the Oliver Estate at Pittsburg, a difficult engineering feat in an addition to the smokestack as shown in the accompanying illustration. This plant supplies all of the Oliver properties, including the Oliver Building, a twenty-five story office structure, the McCreery & Company store, a twelve story building, and a number of smaller buildings, with electric lights, steam heat, elevator service, refrigeration and compressed air, and is large enough to take care of any addition which may be made to the property, including the projected Hotel Oliver.

This addition to the stack was erected while the motors in the power buildings were in operation, and without stopping any of the machines in the building.

Thrilling feats were performed daily by workmen on the stack. The work was so hazardous that when the contract was to be let, several contracting engineers refused to attempt it. However, Mr. Edwin K. Morse, consulting engineer, finally produced blue prints which resulted in the officers of the Fort Pitt Bridge Works accepting the contract, and the work was rapidly and most satisfactorily completed.

Where the addition was to join the original stack, where the cantilever is shown, there was an open space of eighteen feet. This permitted the gas fumes and cinders to reach the open air without retarding the work.

The original smokestack was 220 feet high, but it was decided to add 150 feet to it, so that the office holders in surrounding skyscrapers would not be annoyed by gas fumes and cinders.

The contractors feared that the girders of the building would be insufficient to support the additional weight, so they erected another iron support attached to the main columns of the

building. With the aid of a cantilever, the erecting of the stack was made possible. The greater portion of the work was done from the inside of the stack, which is probably the highest in the country.

Unwilling to risk the necessity of a frequent repainting of such a stack, both Mr. Morse and Mr. Cadwalder Jones, Jr., superintendent of the power plant, agreed upon the use of a well known and reliable paint, and Dixon's Silica-Graphite Paint, Black, was selected in competition with many other brands.

WATCH THE WIRE ROPE

"Happily the use of wire rope as a means of connecting the emergency brakes with the actuating lever is passing out of popular use. At the same time on old cars, or the newer machines which are still in use, in which this construction is employed, the dangers attendant upon its use are still encountered. In addition to the need of keeping the cable well lubricated in order to assist it in equalizing the strains on the brake bands, it is important that its condition be watched with extreme care, as the breaking of even a single strand of the wire may involve the clogging of the rope when in action and invariably foretells an ultimate breakdown. After the first strand breaks, the complete rupture follows with surprising suddenness."

The above appeared in a recent issue of *Motor Print* and we wish to call attention to the advantages of the Dixon Graphite Grease for protecting wire ropes. The graphite in the grease prevents any corrosion, as graphite is unaffected by moisture. It also furnishes the necessary lubrication to allow the wire strands to slide over each other easily, thus reducing internal wear to a minimum. The Dixon Graphite Greases have for a long time been standard with wire rope manufacturers and users.

**This is the
Point**

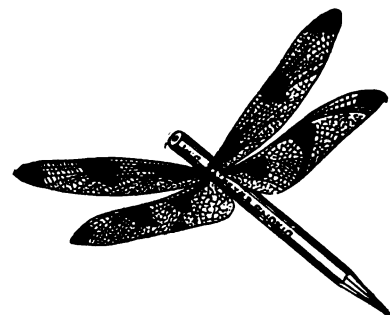
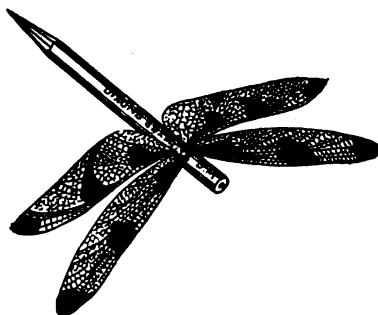
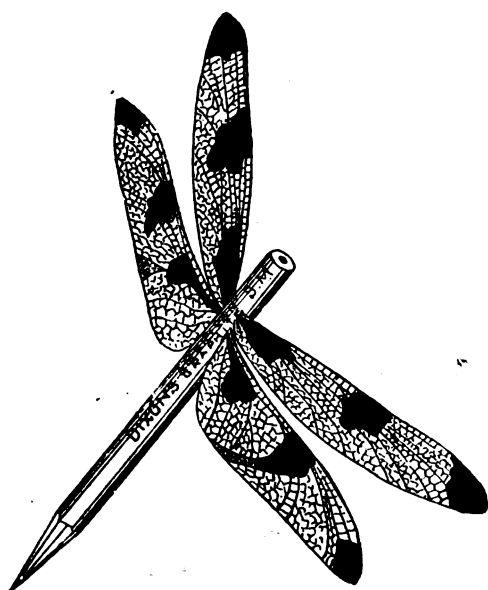
**Many lead-pencils are
whittled into waste-
baskets because the
graphite falls out of
the cases in short bits.**

**DIXON'S
AMERICAN GRAPHITE
PENCILS**

**sharpen to a writing
point every time and
that is their strong talk-
ing point. Made in Amer-
ica for all the world,
and made good by**

**JOSEPH DIXON
CRUCIBLE COMPANY
Jersey City, New Jersey**

DIXON'S PATENT SM-Nr2 116



THE AIR IS FULL OF PRAISES OF THE DIXON PENCILS

If you ask your stationer for a Dixon and he is undecided as to just what may suit you, suggest a DIXON'S AMERICAN GRAPHITE No. 152 if you wish a round one—or No. 116 if a hexagon shape.

For a choice pencil with tip and rubber we recommend Dixon's Anglo-Saxon in No. 1, 2, 3 or 4 degrees of hardness of lead.

If very choice, Dixon's Eldorado—in any degree of hardness.

If for copying, Dixon's Eterno or Endurance, the first mentioned slightly softer than the latter.

If for manifold writing with carbon sheets, Dixon's Order Book No. 2020.

We manufacture all styles, shapes, finishes and grades—so that any special requirement can be met.

DIXON'S STAMP MEANS PENCIL PERFECTION

SOUTH AMERICA AND THE MANUFACTURER

The *New York Commercial* says: "It is pretty well understood among those who have given the matter careful consideration, that business in the next fifty years is going to be largely a matter of expanding foreign markets and widening foreign acquaintance. Americans who can't talk with foreigners won't be in it. The services of one commanding a foreign language are of distinct value to an exporting house. Spanish happens to be a bit of a leader just now. The acquisition of the Philippines and Porto Rico by the United States, the severance of Cuba from Spain, the growing importance of Mexico, the construction of the Panama canal, and the increasing commercial and industrial activities of the Central and South American countries, all unite to make a knowledge of the Spanish language a business necessity. There is money in it to the young man who learns to speak and write Spanish and Portuguese."

Few of the young men in the United States realize that Brazil alone is a great deal larger than the entire United States and that intimate business relations with Brazil have as yet hardly begun. Probably the manufacturers of the United States have better opportunities in Brazil than in any other of the South American States, for the reason that the manufacturer of the United States has already permitted the wide-awake manufacturers of England and Germany to get ahead of him.

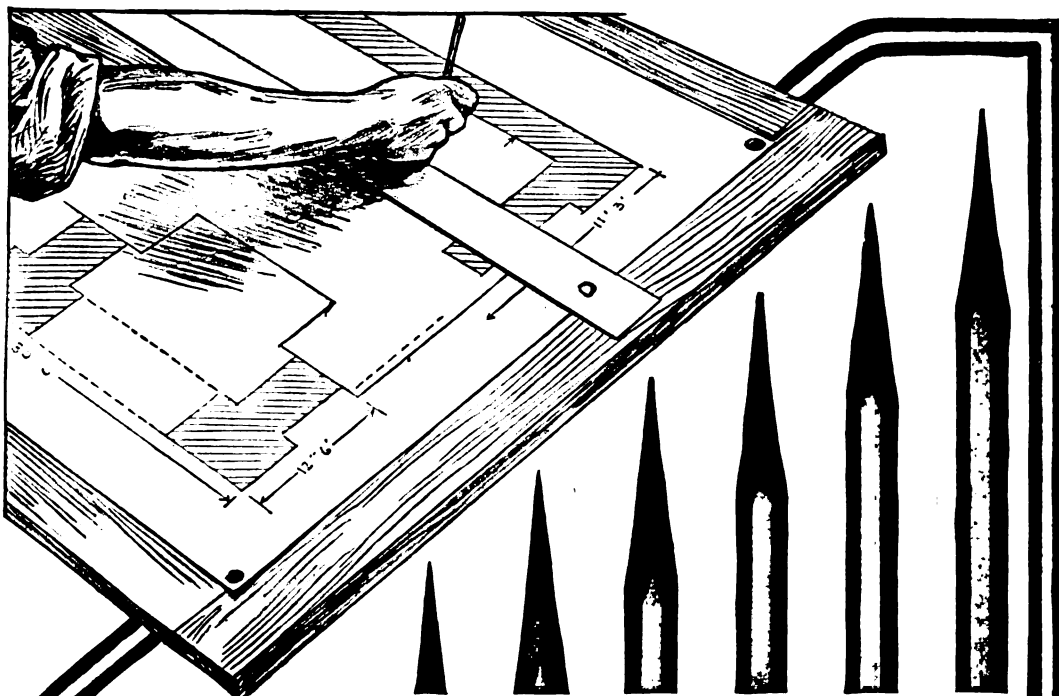
A WIRELESS-OPERATED BOAT

Consul General Charles Denby, of Vienna, Austria, writing to the United States Government, mentioned the exhibition of a wireless-operated boat on the Danube at Vienna. The boat was controlled by wireless electricity from the bank without any person being on board. The boat carried a storage battery which furnished its motive power, the "system" or invention consisting in the adaptation of wireless electric waves of different lengths to the control of the motive power, steering gear, and other mechanism.

The boat moved forward and back, turned right and left, described figures, was guided to definite points, rang bells, exhibited flags and lights, fired guns, etc., giving proof of effective control.

The mechanism was, however, far from perfect; the speed was not great, the responses to the operators' will were hesitating and inexact, and the range was limited to a few score yards. The exhibition, in fact, was notable only as the beginning of the development of a mechanism of possible great importance.

DURING 1910 Mexico exported chicle, which is used in the manufacture of chewing gum, to the value of \$1,705,000. The quantity of these shipments is sufficient to build a duplicate Washington Monument in chewing gum blocks.



Use Dixon Pencils In Your Draughting Room

For clean, smooth, sharp lines, it's hard to find the equal of Dixon's Eldorado Pencils. They are uniform, properly graded, dependable. The leads are made for hard use—for particular users; and made in the quality way that has upheld the reputation of all Dixon's products since 1827.

DIXON'S AMERICAN GRAPHITE PENCILS

come in all degrees of hardness or softness, from 8 H to BB, for fine scale drawings or rough shop drawings. They never flinch, never disappoint, never vary in merit. American made for American needs, and *good* to the last half inch—*proof* in the first dozen.

JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.

The drawing for this illustration was made with a Dixon Eldorado Pencil.

Send now for Dixon's Guide for Pencil Users. Tells the proper pencils for all uses. No charge.



GRAPHITE

VOL. XIV.

MARCH, 1912.

No. 3.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

WHISKERS AND PRESIDENCY

As a help to those who are prognosticating and forecasting and drawing horoscopes as to who will or will not be the next president, it may be well to make a memorandum as to whether whiskers or no whiskers determine who is who in the matter of a coming president. We are advised by the *Washington Herald* that it so happens that no democratic candidate for president in fifty or sixty years has worn an actual full beard. Douglas was smooth-shaven and McClellan wore only a mustache when nominated in 1864.

Seymour was smooth-shaven when the candidate in 1868, and the Greeley beard was like that of a goat, far below the chin, leaving his face absolutely clean.

Tilden's face as a candidate was without adornment, and Hancock had a mustache and goatee, but smooth-shaven cheeks. Grover Cleveland had only a mustache, and Bryan has ever been as smooth-faced as a priest. Parker lacked a beard in the 1904 campaign, and Bryan continued smooth-faced in his last fight.

On the other hand, most of the republican presidents since 1860 have had beards. Lincoln, Grant, Hayes, Garfield and Harrison were all full-bearded men, while Roosevelt and Taft were each satisfied with a mustache. William McKinley was the one smooth-shaven republican presidential candidate since 1860.

Every republican candidate wearing a beard was elected save Blaine, and every smooth-faced democratic candidate for president was beaten; so that Senator Kern of Indiana, who is mentioned as a candidate, may lay some claim to whiskers as really useful to a candidate seeking high office from the American people.

DIXON'S ETERNO PENCIL

It may be interesting for you to know that in addressing (full name, street address, city and state) 3,300 post cards, one Dixon's Eterno Pencil was used and less than two inches of the lead was worn or sharpened off for the whole work.

This looks like a very good record for a comparatively soft indelible pencil.

TRADE OUTLOOK

How's business? Ask the steel manufacturer. His plants are operating at from seventy-five to eighty per cent of their capacity. What is more, the indications are that they will continue to operate at this rate throughout the first half of the year. And an active steel trade foreshadows improvement in the foundry industry. Already some of the jobbing shops report better inquiry and the melt is slowly, but steadily increasing. For months the foundry trade has been characterized as "spotty." Some shops were running overtime, while others were taking off only a few heats each week. The specialty foundries, with few exceptions, have been enjoying a normal demand, although some of the malleable and steel shops, dependent largely upon railroad business, have been running light. The improvement in the supply trade reflects a greater foundry melt and generally improved trade conditions foreshadow increased activities for the casting shops. Gray iron shops specializing in automobile work are running double-shift and the brass shops and aluminum foundries are equally well engaged.

Presidential years are not off years, in fact trade statistics prove the reverse to be true. The political turmoil has been discounted almost entirely and the average manufacturer is too busy to listen to the agitation of the radicals. Prices for castings are still low and in many instances barely represent the cost of manufacture. Raw materials, likewise, are quoted at low levels and notwithstanding the increased iron consumption, pig iron prices have not advanced.

The foregoing we find is the resumé of the trade outlook given in the February number of *Foundry*.

GREAT WEST SPECIALTY AND IRON FOUNDRY CO.,

EDMONTON, ALBERTA, Oct. 14, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

DEAR SIR:—I bought, last April, two No. 12 crucibles, marked "S. P. July 31, 6177," and have used one of the pots ever since, and it is still good for quite a bit of service and I expect to get several heats out of it yet.

This pot has melted over half a ton of scrap, and as near as I can figure it out, it has done better than fifty heats.

It is a dandy and I can recommend Dixon Crucibles to any one who wants to get good work and long life.

I have given your Mr. Westervelt an order today for some more, also some foundry facing, which I trust will be as satisfactory as the crucibles. Yours very truly,

G. GAEBEL, Proprietor.

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

President—GEORGE T. SMITH
Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
Ass't Treas. & Ass't Sec'y—J. H. SCHERMERHORN

DIRECTORS:

GEORGE T. SMITH	WILLIAM H. CORBIN
GEORGE E. LONG	EDWARD L. YOUNG
WILLIAM MURRAY	HARRY DAILEY
WILLIAM G. BUMSTED	

OFFICES AND SALESROOMS:

NEW YORK SALESROOM, 68 Reade Street.
 PHILADELPHIA SALESROOM, 1020 Arch Street.
 SAN FRANCISCO SALESROOM, 145 Second Street.
 CHICAGO OFFICE, 1324 Monadnock Block.
 BOSTON OFFICE, 648 John Hancock Building.
 PITTSBURG OFFICE, Wabash Terminal Building.
 ST. LOUIS OFFICE, 501 Victoria Building.
 WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
 BALTIMORE OFFICE, 1005 Union Trust Building.
 BUFFALO OFFICE, 72 Erie County Savings Bank Building.
 ATLANTA OFFICE, Fourth National Bank Building.

EUROPEAN AGENTS

Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

THE RAILWAY BUSINESS ASSOCIATION

reports that a marked tendency, already widespread, has developed in the direction of a constructive policy affecting railways and in many instances affecting industry and business as well. The states which have been pioneers in regulation of railways and have up to a recent period done most in that direction seem to have nearly or quite given up the quest for further restrictions and are now evincing anxiety to attract capital for the development of transportation and business.

The numbers of laws passed directly dealing with the carriers was cut down in two years fifty-eight per cent, or from 664 in 1909, when forty-one legislatures were in session, to 276 in 1911, with forty legislatures.

Candidates for office in several states went to the people on platforms promising to treat business and transportation enterprises fairly and constructively, and such candidates were in each case elected.

LETTER FROM ANOTHER SANTA MONICA WINNER

Mr. Louis F. Nikrent is another automobile enthusiast of national reputation who endorses Dixon's Motor Lubricants.

Mr. Nikrent's letter, which is reproduced below, is the third of a series which began in January GRAPHITE. These letters form a unique and valuable collection in that they are all from experts and unqualifiedly express an enthusiastic regard for Dixon's Motor Lubricants.

Mr. Nikrent writes as follows:

LOS ANGELES, CAL., Oct. 19, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—I beg to inform you that in the Santa Monica Road Races I drove the Buick "18" in the Light Car Race which I won. This was the smallest car in the race, both in size and cylinder displacement.

I also drove the Buick "30" in the Medium Car Race. This race I would also have won had it not been for a flooded carburetor.

Both of these cars were lubricated throughout with the Dixon Graphite Auto Lubricants, using your No. 676 in the universal joints, Graphitoleo on the wheel spindles and your No. 677 in the transmissions and differentials. I wish to state that I drove both races without a stop. Had not the least trouble with any part of my machines and the greases which I used in the car appeared as good afterwards as when first put in. I am convinced that the great speed maintained throughout these races was due to the use of graphite lubricants, reducing the friction and increasing the efficiency of the engine thereby.

At the suggestion of Mr. A. G. Thomson I thoroughly coated the inside of my casing with your Motor Graphite, also rubbing a small quantity upon the tubes. I went through both races without changing a tire or having tire trouble of any description.

I wish to assure you that it is my intention to use Dixon's Graphite Auto Lubricants in all my future races and will be glad to recommend them to any one wanting a good lubricant.

Yours truly,

LOUIS F. NIKRENT.

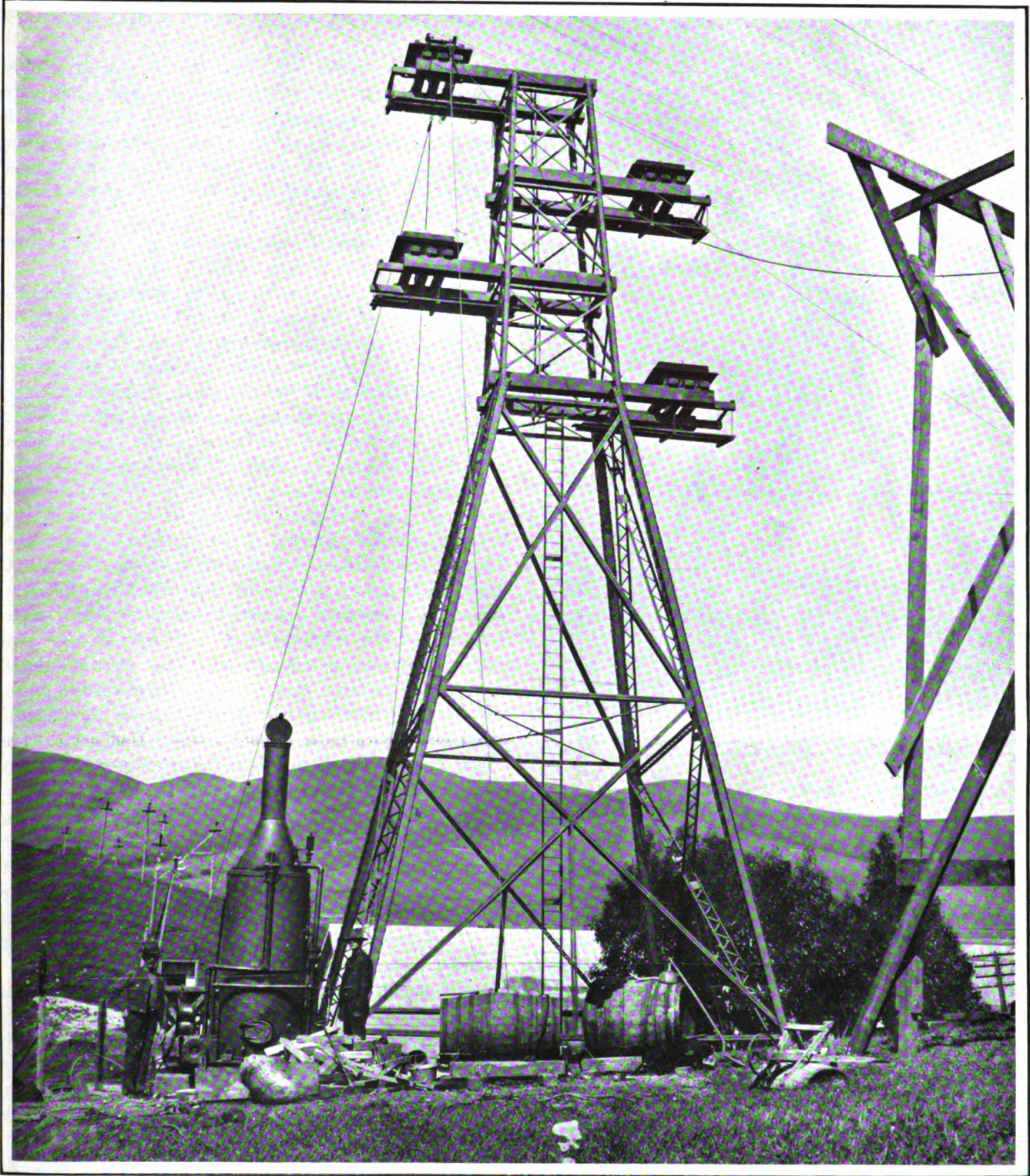
LITTLE FLEA

From 'Frisco Branch.

Wriggle, wriggle, little flea,
 How I wonder where you be,*
 Up above my spine so high,
 When I grab, I pass you by!

When the glorious sun has set,
 And beneath the sheets I get,
 Then you make it warm for me
 You pestiferous, wriggling flea.

*Poetic licence No. 0576.



BAY COUNTIES POWER COMPANY'S TOWERS

On this and the succeeding page are shown photographic reproductions of two of the Bay Counties Power Company's towers, San Francisco, Cal. The towers serve as another illustration of the durability of Dixon's Silica-Graphite Paint. Almost a decade ago they were painted with two coats of Dixon's Paint and since that time no further painting has been considered necessary.

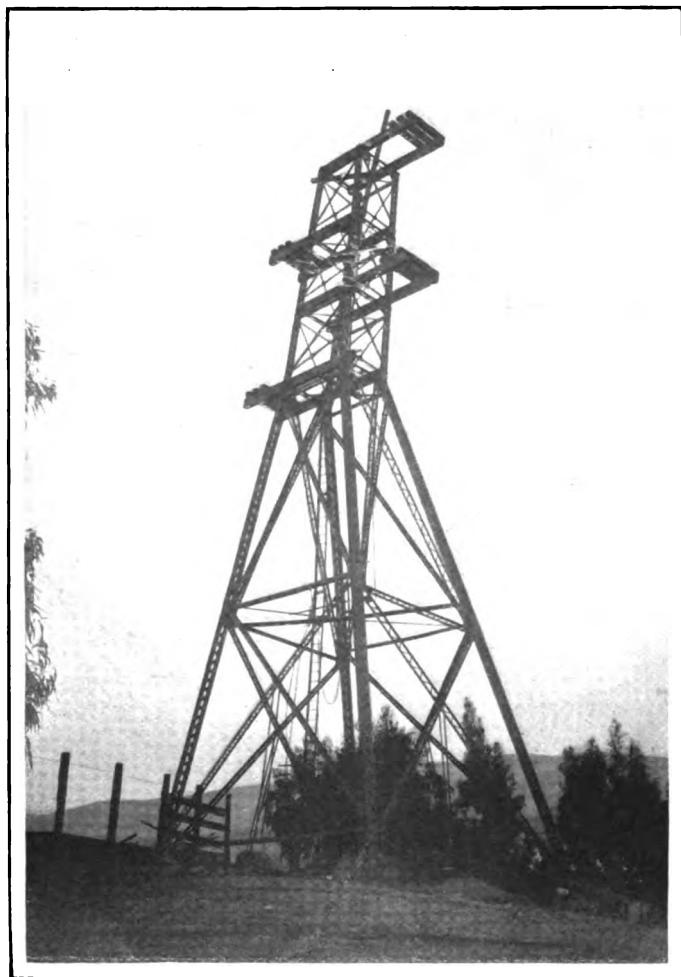
In the fall of 1908 the Bay Counties Power Company made a thorough examination of its towers and the paint that had been applied during the spring of 1903 was found to still be in perfect condition. Again in the fall of 1910 an examination

was made and though some slight abrasions were found at the bases, they were considered so slight that the company deemed a repainting entirely unnecessary.

As might be expected, the Bay Counties Power Company are so well pleased with the remarkable service given by Dixon's Silica-Graphite Paint, that they have expressed their intention of using it again when repainting occurs.

As a standard coating for towers, tanks, bridges and any and all metal surfaces, Dixon's Silica-Graphite Paint has been proved by nearly fifty years of actual use.

DIXON's graphite publications sent free upon request.



BAY COUNTIES POWER COMPANY'S TOWER

ADVENTURES OF AN ANGLO-SAXON

By SHERMAN B. PARIS

The weary reporter dozed in his chair at the end of an uneventful day of newsgathering. Visions of big "scoops" flitted across his tired brain, each accompanied by some unfortunate accident that had frustrated his most energetic attempts to send the news to his paper. Perspiration formed on his brow as he struggled through this series of disappointments, but suddenly he became aware of a queer, little form before him, trying to attract his attention.

"Why, why,"—he stammered, instinctively feeling an upper vest pocket, as if in search of something.

"Sure thing," he was interrupted, "I'm the Dixon Pencil you gave to the great author you called on to interview this morning. He forgot to return me to you and for two solid hours I was kept busy writing his new serial."

"Do you remember the plot?" inquired the now thoroughly wide awake reporter.

"No, just as I reached the climax of a powerful love scene and was becoming interested in the manuscript, his architect called to consult him about the plans of a new country estate. I was called upon to make several minor changes and, as usual, was carried off. I saw you later at the architect's office trying to get a look at the new subway plans. Just before you arrived I was busy making some alterations on them."

"Tell me about them," urged the excited newsgatherer. What—"

"I don't remember 'em," was the short reply. "I was rubbering at a pretty stenographer who was using a rival make of mine. She broke his point several times and I think I heard her make some cutting remarks. Each time I fairly quivered to offer my services. It beats all how these foreigners capture our American girls. I believe she looked at me longingly once and—"

"Stow it," advised the disgusted reporter, "What happened next?"

"Why, shortly after you left, a big man with whiskers—a Russian diplomat, I guess—his name was Rollevitch (at this name the reporter straightened in his chair, fixed his startled eyes upon the object before him and strained to hear every word), called to examine the plans of his Washington residence and, of course, after I had made certain improvements I wandered into the pocket of this giant and reposed beneath a great flow of whiskers. The next time I was brought forth in a large room, luxuriously furnished with thick tapestries and rugs, huge mahogany carved furniture and hung with beautiful oriental pictures. Several men were in the room. Three or four of them, including my new owner, sat about a table examining an official-looking document. All of them talked and as a result I again began working. The document I discovered was a new treaty—"

Unable to contain himself longer, the reporter leaped to his feet and glowered over the small object on the table.

"What did that paper say," he demanded threateningly. "Tell me!"

The small object assumed a majestic attitude and a dignified though hurt expression.

"Sir, I am an "American Graphite" pencil to the core, and I assure you that even though I could understand that horrible Russian lingo, I could have no possible desire to read it. That document, sir, was written in Russian."

The reporter sank back in his chair, pathetically chagrined and the object of his gaze seemed moved at his show of despondency.

"I went out to lunch afterwards and met a Russian artist. (The reporter showed no sign of interest). He insisted upon using me and, say, I never thought I could draw pictures before, but I certainly did produce a wonderful work of art today. I didn't quite know what I was making at first, but as the lines began to form I saw it was the interior of the very restaurant in which we were dining. I got an awful shock then, for I suddenly began to draw an exact picture of your face. You were looking intently at something, and at the very next opportunity I looked around and, sure enough, there you were."

"Sure," nodded the reporter gloomily, "your artist friend was tipping me off to Whiskers. He disappeared right after that and I didn't see him again."

Perceiving that a particularly unfortunate sequel had been chosen, the talkative little object on the table abandoned the narrative of his immediate adventures and attempted to interest his listener in another tale.

"Do you know that before you owned me I did something that no other pencil in the world ever did before? I did a vaudeville act—sort of magic, legerdemain, you know—I didn't have any help either—did it all alone in ten seconds,

all of the audience watching me and none of them knew how I did it. I had five hundred and seventy-six pictures, all different, taken of my act and already millions of people have witnessed my performance."

The reporter stared at his queer companion, incredulity and pained surprise crossing his features. Something that sounded like a chuckle came to his ears, though too indistinct to be readily located.

"You don't believe me, but it's true. You may have seen it yourself. Do you ever go to a motion picture show?"

"M—m— sometimes," nodded the reporter, and then as if some scene had suddenly been brought to mind, "Why you don't mean to tell me that you are the pencil that writes without any human hand or brain to guide it?"

"That's me! I write the trade mark for the people who make "Kalem" films and I appear with every film shown to the public. Last season I appeared in fifteen thousand shows—"

"But how do you do it?" interrupted the reporter, who was scenting a bit of news and had already reached for his note book.

"Here, pick me up and I will write it all down for you."

The reporter gingerly lifted the small object in his hand and a succession of thrills passed through him as he felt the vibrations of the small body writing rapidly on the paper. He soon became used to the novel situation and gradually his attention became fixed upon the writing before him. This is what he read:

"First I am operated upon. Some of the lead or graphite is taken from the point end of me and replaced by a piece of wire. I am then stuck on a large piece of cardboard, as shown in Fig. 1, and photographed.



FIG. 1



FIG. 2

"I am then taken out, stuck in the next dot and again photographed. Before each photograph is taken the space between the dot I last occupied and the one I am to be photographed on, is blacked in so as to have it appear as though I made the mark. The space between two dots represents a small fraction of an inch."

"Then you don't write anything?" broke in the reporter.

"No, each dot you see in Fig. 1 represents a photograph and by the time I have reached the dot as shown on Fig. 2, over three hundred photographs have been taken of me. These photographs are run so rapidly on the motion picture reel that they appear as "one continuous picture."

The reporter sat still while this wonderful little object disengaged itself from his hand and nimbly leaped upon the table and assumed his old position.

"That's a bully good story. You must be pretty well used up," remarked the reporter solicitously.

"Oh, they won't throw me away just yet," was the cheerful rejoinder, "I'm too good a pencil for that. I shall have a gold plated holder soon and that will serve for sometime."

"And then?" questioned the reporter.

"And then I shall enter upon my childhood days. You know the life of a pencil is just the reverse of a human being. We do our greatest work while young and when we grow old we draw funny little pictures, mark up wall paper and every picture book we see and gladden the hearts of thousands of youngsters. We—"

The reporter sat up in his chair, rubbed his eyes and yawned. Then he gazed earnestly at the slim little object on the table before him.

"Mighty queer," he murmured as he picked up the pencil and examined it thoughtfully. "A pencil is a wonderfully useful little article, anyhow. I shan't forget this Anglo-Saxon."

NOTE:—We are told upon good authority that, in making the Kalem trademark as above described, a Dixon Pencil was actually used.

STANDPIPE TESTIMONIAL

January 19, 1912.

Joseph Dixon Crucible Company,

Jersey City, N. J.

I have your favor of the 16th instant referring to testimonial I gave you November 1907 as to the durability of Dixon's Silica-Graphite Paint I put on the standpipe of the Marion Water Company in 1902 and 1907. This standpipe has not been painted since September 1907, and today does not show any signs of wear. I consider it good for five years yet, if not longer.

In this connection I wish to state that I am not connected with the Marion Water Company. I am proprietor of the Marion Roofing Works and have used Dixon's Silica-Graphite Paint in my business for a number of years. I did this work for the water company by contract. Would be pleased to receive a few copies of your booklet when ready. I remain,

Very truly yours,

(Signed) F. R. SAITER,

Marion Roofing Works, Marion, Ohio.

JUST ONE THING AFTER ANOTHER

Chug-chug!

Br-r-r! br-r-r!

Honk-honk!

Gilligillug-gilligillug!

The pedestrian paused at the intersection of two busy cross-streets and looked about.

An automobile was rushing at him from one direction, a motor cycle from another, an auto truck was coming from behind, and a taxicab was speedily approaching.

Zip-zip! Zing-glug!

He looked up and saw directly above him a runaway airship in rapid descent.

There was but one chance. He was standing upon a man-hole cover. Quickly seizing it, he lifted the lid and jumped into the hole—just in time to be run over by a subway train.

—Lippincott's.

HE STEALS the engineer's good name who sells him some "just as good" graphite for Dixon's.



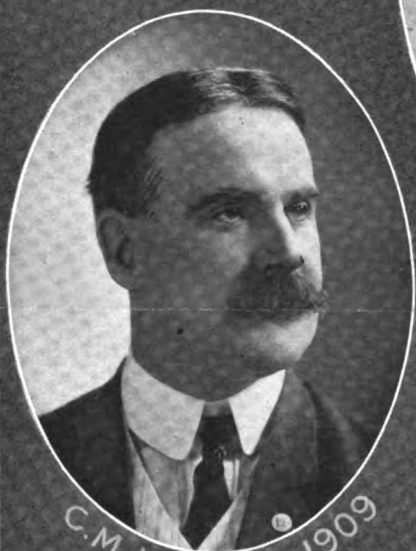
I.L. LEVISON 1899



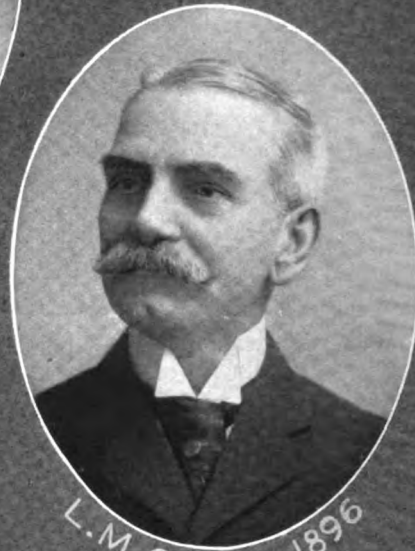
JOHN A. CONDIT 1896
MANAGER



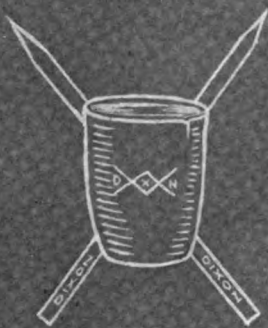
L.J. KUHN 1911



C.M. HARDING 1909



L.M. CHASE 1896



DUDLEY THURSTON 1902

**BUFFALO
SALES FORCE**
JOSEPH DIXON
CRUCIBLE CO.



J.G. TIBBITS 1905

JOSEPH DIXON CRUCIBLE CO.'S SALES FORCE FROM THE NORTHERN DISTRICT

Buffalo, the convention city, easily ranks as one of the most interesting and entertaining cities of the United States. It is a city of natural wonders and vast industrial achievements. No other city is so well equipped to receive the million of people that is said to visit Buffalo each summer; and with Niagara Falls to furnish its manufacturers with unlimited power, its fast and steady growth is not to be wondered at.

Buffalo is the headquarters of what the Joseph Dixon Crucible Company has chosen to call its Northern District. This territory consists of practically all of New York State, excepting only a few south-eastern counties. It also includes, roughly speaking, that part of Canada lying directly north of New York State.

The Buffalo office of the Joseph Dixon Crucible Company was established three years ago as the result of rapidly growing Dixon interests and the consequent necessity for more extensive personal organization.

Mr. John A. Condit was selected to take charge of the bisons. The Dixon Company possesses an interesting reading of Mr. Condit's character furnished by the experts, Fowler & Wells. From this document we read that Mr. Condit "possesses a very keen and intelligent mind. He is able to discern many things that are not noticeable on the surface. He is able to read between the lines of things and take a hint when a full explanation is not given him. He is able to use young men properly, that is, he can call out the fine ability or the excellent qualities of others to advantage. He should be good in organizing, planning, arranging and mapping out work for others, in fact his casualty is always manufacturing new ideas, and he is capable of widening his sphere of usefulness in the future by his capacity to understand men and makes the most of opportunities as they arise.

He does not object to a little fun now and then and like Abraham Lincoln will mix it with his daily life, and will turn off disappointments or get rid of bores by this aid.

He has a keen eye to reckon up the profit and loss of things. He is shrewd in business matters and he is able to condense what he sees so as not to waste time in giving his directions.

He should be known for his energy, executiveness and power to expedite matters, for his foresightedness and ability to map out work for others, and further for his intuitive insight into the characteristics of these around him."

Mr. Condit possesses a most pleasing personality and never fails to interest himself to all whom he meets. Whatever success may be attributed to personality—and in business it is often no small measure—may surely be credited to John A. Condit.

Mr. Condit's connection with the Dixon Company dates back to the year 1896, at which time he began as assistant selling and advertising manager of Dixon's Stove Polish. His sales promotion work for this old and well known Dixon product led in 1899 to his adoption of the road as a full fledged "knight." During this period of his long service, Mr. Condit acquired a thorough knowledge of the territory and trade in which, later on, was established the Buffalo office.

Mr. Condit is surrounded by an experienced staff of salesmen, all but one of whom have been connected with the Dixon Company prior to the opening of its Buffalo Branch.

Mr. C. M. Harding, the able "School Man" of the Buffalo force, is an energetic, hard working Dixonite and has been described as "one of Nature's noblemen." Mr. Harding became identified with the Dixon Company twenty years ago. After fifteen years devoted to his work, Mr. Harding resigned to give time, energy and money to a business which would permit him to be at home with his family. At the time of his resignation, Mr. Harding had become one of the important threads in the great business strand and as he, himself, expressed it, it was like tearing himself apart to separate himself from the Dixon Company. Things, however, did not go as smoothly as Mr. Harding had hoped and in 1909 he was welcomed back to the Dixon fold. Mr. Harding enjoys an unusual intimacy with those to whom he sells and his popularity in educational circles is, needless to say, well deserved. Mr. Harding is one of the few salesmen who successfully build their work upon bed rock foundation.

Mr. I. L. Levison has long been known to the stationery trade as the representative of Dixon's American Graphite Pencils. Mr. Levison, during his thirteen years on the road for the Dixon Company, has acquired an intimate knowledge of the retailer and the intricate details of retail business, and the stationer who fails to handle Dixon's American Graphite Pencils in Mr. Levison's territory must at least put up a good excuse.

Mr. L. M. Chase, who joined the Dixon force in the same year as Mr. Condit, directed upon several occasions some of the many educational campaigns for Dixon's Stove Polish. He is at present particularly interested in crucibles, paint, mill and factory supplies.

Mr. J. G. Tibbits, like Mr. Condit and Mr. Chase, is a graduate, so to speak, of the Stove Polish Department. Mr. Tibbits does not confine his efforts to any one Dixon product but represents a more or less complete line.

Dudley Thurston, universally known among his friends and acquaintances as "Dud," began with the Dixon Company as a bill clerk in the shipping department. Five years later he became associated with Mr. Condit and others in the advertising and selling department of Dixon's Stove Polish. "Dud" showed such a good knowledge of the entire line of Dixon's Graphite Products that when the Buffalo office was opened he became a general representative and has since fulfilled the expectations of those who know him.

Mr. Louis J. Kuhn is the latest addition to the Bison salesforce and completes the trio of pencil men. Mr. Kuhn, previous to his joining the Dixon Company, conducted a stationery and post card store in Buffalo. After selling out his interest in this business he immediately became a Dixonite. Mr. Kuhn is engaged in interesting the manufacturers, banks and business offices in the use of Dixon Pencils and to thereby increase retail trade.

LET HER DOWN EASY

Young Husband: Did you make those biscuits, my dear?

His Wife: Yes, darling.

Her Husband: Well, I'd rather you would not make any more, sweetheart.

His Wife: Why not, my love?

Her Husband: Because, angel mine, you are too light for such heavy work.—*Philadelphia Telegraph*.



**PENNSYLVANIA RAILROAD BRIDGE,
DARKWATER, PA.**

The above reproduction is a very interesting view of the Pennsylvania Railroad Bridge on the Susquehanna Division at Darkwater, Pa.

This structure was erected by Braun & Stuart Company of Philadelphia, well known contractors.

The steel work of this important bridge is protected with a priming and finishing coat of Dixon's Silica-Graphite Paint.

The Dixon Paint affords absolute protection and leading railroads are using this material for bridges, signal apparatus, steel cars, etc., because it is the only coating not injured by brine drippings, sulphur fumes, acids, weather and water.

GOLDEN WEDDING


Of a Seller of Dixon's American Graphite Pencils

Whether or not the selling of Dixon's American Graphite Pencils has any influence on longevity is something that we cannot fully determine, but we do know that Mr. and Mrs. Barney Millentrick of Hastings on the Hudson will be helped by the entire juvenile population and dozens of their elders to celebrate their golden wedding.

The couple have been prominent figures in the life of the community. Mr. Millentrick's popularity was increased when, at the close of the Civil War, he became the constant companion of Admiral Farragut. The naval hero's home was right across the street from the Millentrick abode and the two were in each other's company every day. The old citizens tell of Admiral Farragut coming down the street, with the familiar figure of the German a few paces behind. Rarely

did they speak to each other, but they seemed to have a code of signals and each understood perfectly what was in the other's mind.

For the past ten years Mr. Millentrick has conducted a stationery business, and among other goods sold to school children have been Dixon's American Graphite Pencils.



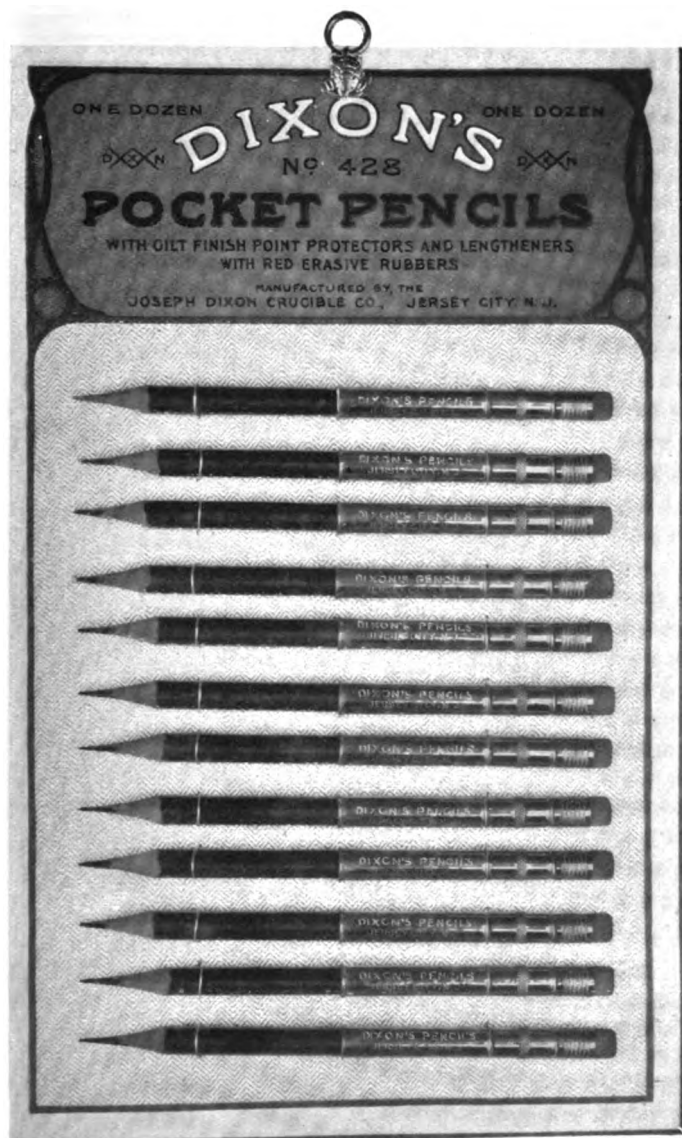
The uniformity
of the leads of any
given grade, the qual-
ity of performance
and the sturdy commercial
endurance of

**DIXON'S
AMERICAN GRAPHITE
PENCILS**

prove that after all there
is something in a *name*.

**JOSEPH DIXON CRUCIBLE
COMPANY, Jersey City, N. J.**

Send for Dixon's Pencil Guide—gratis



OLD FRIENDS IN A NEW GUISE

Two very attractive display cards, each the bearer of one dozen pencils already known as good members of the Dixon family, are making their bow to the trade. In nautical parlance they are "taking the water" in great style and promise to "spread their sales."

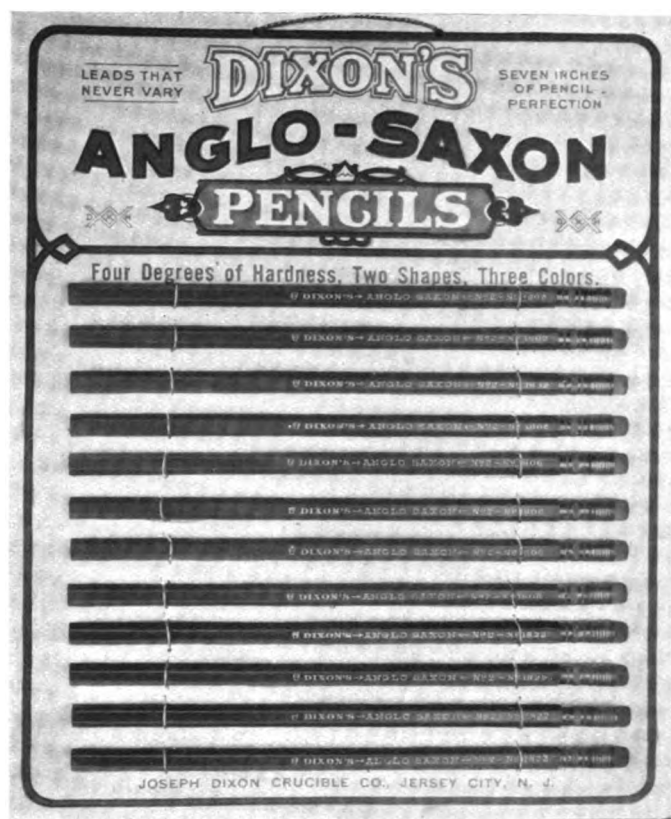
The reproductions do scant justice to the natural appearance of these cards. Each is well worth window display. The popular Anglo-Saxon is shown in three colors or finishes, in the hexagon shape and No 2 grade. This is to meet a popular demand for a No. 2 high class pencil carded as a ready seller.

The regular Anglo-Saxon line comprises round and hexagon shapes, three finishes and four degrees of hardness of leads.

Dixon's No. 428 Pocket Pencil blossoms forth with a new gilt finish point protector and lengthener on a $6\frac{1}{2} \times 10\frac{1}{2}$ inch card, also in three colors. No pocket pencil user will fail to be smitten with this new suit of armor and no dealer should overlook either of these new propositions.

Prices furnished promptly upon application.

NO MATTER how fearfully and wonderfully made, the engine requires proper lubrication—that means Dixon's Flake Graphite.



WHO THE DEVIL IS THE DEVIL?

'Tis said the devil was bright,
'Tis said the devil was true;
'Tis said the devil did fight
And he was beaten, too.
I wonder what the devil
Does all this devilment mean.
I ne'er have seen the devil,
And who the devil hath seen?
Some say his lordship's black,
And some will swear he's blue;
Some say that he's horned and hooped;
I wonder which is true.
But true or false, or horned or hooped,
Be he the worst he can,
The meanest devil I ever met
Was a mean and devilish man.

The above screed is one of the less grave productions found in the pocket of a Bowery derelict poet, who had finally landed in the station house.

AT THE International Sunday-school Convention at Louisville, in answer to the roll call of states, the reports were verbally given by the various state chairmen. When the Lone Star was called, a brawny specimen of Southern manhood stepped out into the aisle and with exceeding pride said:

"We represent the great state of Texas. The first white woman born in Texas is still living—she now has a population of over three millions."

There was a pause of bewilderment for a moment, and then a voice from the gallery rang out clear and distinct:

"Send that woman out to Wyoming—we need her."

—Everybody's Magazine.



AN EARTHQUAKE-PROOF OFFICE BUILDING

We reproduce from the *Engineering Record* the accompanying illustration and write-up in that paper that "when the five story brick and frame office building of the Royal Insurance Company, in San Francisco, was demolished by the earthquake of 1907, the company decided to undertake the construction of a tall building which should go beyond anything so far designed in provisions against serious injury from earthquake shocks. They finally gave instructions to their architects that the study of this matter should be taken up with their engineers and the most earthquake-proof, ten-story modern office building which could be devised should be designed for their 66 x 80 foot lot at the corner of Pine and Sansome Streets.

The study comprised special bracing designed to resist transverse stresses and vibration, special methods of thoroughly anchoring masonry and terra cotta to the framework, and especially a system of vertical and horizontal tension rods forming a sort of large mesh around which the brick walls are built and are thoroughly bonded through and through it, with

a result which can be compared somewhat to the reinforcement of wired glass, in that even if the walls were badly cracked and shattered, it is not likely that large portions, and probably no portions, of the wall would fall to the street.

Messrs. Howells & Stokes, of New York and Seattle, were the architects of the building; Messrs. Purdy & Henderson, New York, consulting engineers; Thompson-Starrett Company, general contractors; and the American Bridge Company, fabricators."

Those of our readers who remember the Dixon booklet, "Through Frisco's Furnace," will no doubt recollect the most excellent way in which Dixon's Silica-Graphite Paint preserved the maximum strength of steel work of the high buildings in San Francisco during the earthquake. In the rebuilding of that great city Dixon's Paint has been given its due consideration and use by both the architects and engineers. In the instance of the Royal Insurance Building, which contains about 900 tons of steel, Dixon's Silica-Graphite Paint was selected as being the most satisfactory preservative because of its great ability to withstand the destructive forces that destroy ordinary paints.

THE AJAX METAL COMPANY

The Ajax Metal Company of Philadelphia is the company that was fortunate enough to obtain the services of Mr. Wm. J. Coane, who for twenty-six years had charge as manager of the Dixon business in Philadelphia. The Ajax Company have been large, long valued customers of the Dixon Company for twenty-five years and in going from the Dixon Company to the Ajax Company, Mr. Coane found all business matters comparatively easy and simple for the reason of the many years of acquaintance with them and his frequent contact with their salesmen that are now co-operating with him, and over whom he acts as second vice-president and sales manager.

The Ajax Metal Company was founded in 1880 to manufacture a special alloy for bearings, which was given the name of "Ajax Metal." Previous to the advent of Ajax Metal, copper and tin alloys had been used for bearings, as standard. Ajax Metal differed from straight copper and tin alloys, in that it contained 10% lead. Lead, it was found, owing to its unctuous nature, added greatly to the anti-friction qualities of the bronze, and although this property of lead was of course previously well known, it had never been incorporated with a copper alloy to any material extent. In fact, it was the unctuous properties of graphite as compared with lead, which suggested the name Black Lead. The addition of lead, therefore, to the copper and tin alloy added very much the same properties as would be added by the addition of graphite, *i. e.*, better lubricating properties.

Curiously enough, it was found that by the addition of lead not only the anti-friction qualities were benefited, but such alloy had a decidedly slower rate of wear. It so happened, therefore, that the Ajax Metal Co., with a product of this kind at its command, and with business push and enterprise, was able to start from a small beginning and build up a business, which to-day is the largest of its kind in the world.

The company has confined its attention, however, not only to the production of Ajax Metal, but has branched out in all directions in the metal line, and to-day is producing a full line of white metal, Babbitt metal, stereotype metal, linotype metal, brass and bronze compositions of all kinds, both in ingot form for the foundry trade for remelting, and in castings of all kinds. The bulk of the castings business, however, consists of car and locomotive journal bearings. The car bearings are supplied machined, babbitted and ready for use.

In 1900, the company developed a process whereby it became possible to incorporate very much higher percentages of lead than had been previously used in its copper and tin alloys. This metal was given the name of Ajax Plastic Bronze. In this instance, the name being suggested by the plastic or yielding properties which this alloy possessed, due to the high percentage of lead which it contains. This is a property very essential for a bearing alloy, in so far that instead of cutting the journal when exposed to aggravated service conditions, it is sufficiently yielding or plastic to conform to such irregularities without heating. The sale of this alloy has been enormous. It has been adopted by many large railroad systems, and is to-day considered the standard of excellence by the majority of machine shops and locomotive builders.

The company's main plant is in Philadelphia. It operates a large branch plant in Birmingham, Ala.

Branch sales offices are in New York, Pittsburg, Washington, Chicago, St. Louis, London and Paris.

Philadelphia works has an annual capacity of 25,000,000 lbs. finished products; Birmingham plant has an annual capacity of 4,000,000 lbs. finished products.

The company also operates its own smelting and refining works.

KEEN-EYED ENGINEER

An old engineer in the north of England was getting his sight tested by a doctor who lived in a house facing a large park. The doctor used to say to his patients, "Look over there and tell me what you can see." When the engineer learned that his sight was to be tested he arranged with his son to take his bicycle half a mile into the park and be oiling it. In due time the old man was led to the window, the doctor saying as usual:

"What do you see?"

The old man, peering out, said: "I see a young man stooping beside his bicycle."

"Do you?" said the doctor. "I don't see anything at all."

"Nonsense," said the engineer. "Why, he is oiling it."

The doctor took up a pair of field-glasses and plainly saw the same.

"Magnificent sight!" he said.

The engineer is still drawing his wages.—*London Telegraph.*

Dixon's Belt Dressing Saves the Belts

Belting economy does not end with the mere purchasing. The belt is worth its cost price only as long as it retains its original "life" and pliability.

Left to itself, the average belt will deteriorate—rapidly if conditions are severe. Dixon's Belt Dressings (Solid and Paste) will keep the belt at highest efficiency and prevent early deterioration.

We have a special booklet descriptive of our belt dressings, which includes some valuable belting information. Copy 190-O free on request.

Joseph Dixon Crucible Company
Jersey City, N. J.

The Value of the “Know How”

Making good crucibles is like using them—a job for the man who knows how.

If you had commenced in 1827 to use crucibles in your foundry—

If you had kept a record of your experience with them, a careful account of your results—success as well as failures—

If you had spent close to a century learning all you could learn about handling crucibles—

Wouldn't you be placing a value on your “know how?”

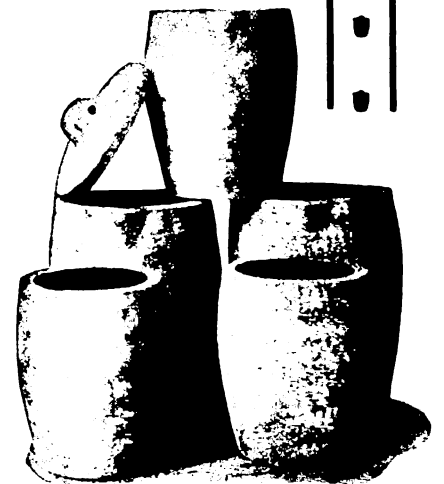
The Joseph Dixon Crucible Company has been learning how to *make* crucibles for eighty-five years.

Our “know how” goes back to the raw material. It goes forward to a thorough knowledge of what the foundryman requires.

It gives us the confidence to say “Dixon's Crucibles are the best because of the “know how.”

And we want you to prove it in your own foundry.

Joseph Dixon
Crucible Company
JERSEY CITY, N. J.



GRAPHITE

VOL. XIV.

APRIL, 1912.

No. 4.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

SPRING IS HERE

and with the flowers that bloom in the spring come the candidates, ornithological, political, etc. Promises are as abundant as buds on the peach tree. The point we make is, what will be the performance, the fruit, for like Harriman, "we are practical men."

The sparrow begins at dawn with a brave chirp, but up to dewy eve he has not evolved anything fuller than a repetition of that noise, thin as tin.

The lustrous starling sits on our fence, opens his great yellow bill and promises something wonderful, but to date it has amounted to nothing more than a raucous disappointment. Robin redbreast on our lawn, and spotted thrush in our wood, trill out music that satisfies from promise to performance. Next spring we will

choose these two ornithological candidates without giving the others even a trial, for they have made a record.

The political candidates are springing up everywhere. Their promises fill the air. The people will choose the man who will be strong on performance. Will it be the pedagogue from Jersey, Teddy, the perpetual candidate, the lion of the Buckeye State, the Epictetus of New York, the trumpet of Wisconsin, Clark, Underwood, favorite sons, a dark horse, or Billiken, who says he is the "God of things as they ought to be?"

The paint candidates also bloom in the spring. Examine their composition and record. The *National Hardware Bulletin* of October, 1911, urges users to shun protective paints that use petroleum or its products as a vehicle or adulterant. Dixon's Silica-Graphite Paint uses only pure, boiled linseed oil as its lasting and elastic vehicle. There is a persistent cling and resistance to abrasion about it because of the paint's silica ingredient. The graphite in it makes it a peerless paint for unctuousness and resistance to gases, brine, acids, ice, damp, heat and cold. It costs a little more but is economical because of longer service, thus saving in labor and material. The Record tells. We have made Dixon's Silica-Graphite Paint in ONE QUALITY only, for nearly fifty years—Four Colors. Use it in original cans, and see that contractor does not adulterate, and that he steel-brushes the surface. Used around the circle of the world on leading railroads, bridges, buildings, pipes of all sorts, fences, gas tanks, water

towers, trolley poles and trucks, roofs, steel cars, and wherever there is steel or iron to protect from corrosion.

Spring is here. You will be examining your steel work after the winter's wear. Use peerless DIXON'S SILICA-GRAPHITE PAINT to protect it. Made in Jersey City, New Jersey, for all the world.—L. M. STOCKING.

BUSINESS IN MEXICO

Are American Manufacturers Slow in Recognizing Possibilities in Mexico, or Do They Not Care for It?

The United States Consul T. C. Hamm, writing from Durango to the Bureau of Manufacturers, Department of Commerce and Labor, makes a statement that merchants in Mexico are busily engaged in renewing and increasing their stocks of goods, which had become very much depleted, owing to the general feeling of insecurity and the fear that goods ordered would not reach destination. He adds that everything points to a year of unprecedented prosperity and expansion.

Investigation has led him to believe that American exporters are not securing the proportion of this increased business which they might. At the hotel in Durango where he stopped, there were five European (mostly German) traveling salesmen, carrying different lines of goods.

Conversation with some of them revealed the fact that they were very much alive to the possibilities of present market conditions and were reaping a harvest of orders by being on the spot at the time when "expansion" is the keynote of renewed business activity. Inquiry failed to reveal the presence of a single salesman representing American goods.

Consul Hamm believes that the trade is well worth the attention of the American manufacturers, but it cannot be advantageously reached by catalogues and correspondence, when European competitors have experienced men in the field. If American manufacturers desire to secure their share, they should send well equipped salesmen, well versed in Spanish.

MUST HAVE A DIXON PENCIL

The editor of a Florida paper writes us that we must send to him by any kind of transportation available, and we must send them quick, two dozen of Dixon's Special Black Pencils. We are also authorized to send bill and the cash will be forthcoming at once, "because the printers and reporters are kicking on every other kind of pencil and I must have this brand or be assassinated."

Dixon's graphite publications sent free upon request.



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

President—GEORGE T. SMITH
Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
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NEW YORK SALESROOM, 68 Reade Street.
PHILADELPHIA SALESROOM, 1020 Arch Street.
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BOSTON OFFICE, 648 John Hancock Building.
PITTSBURG OFFICE, Wabash Terminal Building.
ST. LOUIS OFFICE, 501 Victoria Building.
WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
BALTIMORE OFFICE, 1005 Union Trust Building.
BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

LINSEED OIL VS. PETROLEUM OIL

We earnestly call attention to the important editorial which appears on page 87 of *National Hardware Bulletin* of October 1911, and which reads in part as follows:

"Stringent laws regarding the handling of adulterated paint oils have been enacted by several States. The lines will be drawn still tighter. We would strongly urge all dealers to keep away from oils adulterated with petroleum products, as such goods will sooner or later injure the trade of the dealer who handles them. If one is dealing with a firm not well known to himself, he should have his oil analyzed before offering it to his trade."

Dixon's Silica-Graphite Paint, the world's standard protective paint for steel work, has been made for nearly fifty years

in ONE QUALITY only—Four Colors. We have never used petroleum or other substances as adulterants of our linseed oil. We use only pure, boiled linseed oil as the vehicle, to which there is absolutely nothing added except the necessary pigment. Result, Dixon's stands the test in economy, because of Longer Service, saving you in labor and material.

Dealers will be positively within the law and please their customers by handling only Dixon's Silica-Graphite Paint, which protects the steel work on the world's leading buildings, bridges, water towers, gas tanks, etc.

LONDON FOG

London's authoritative medical journal, *The Lancet*, states that 77,000 tons of soot fell in England's metropolis last year. Any visitor who has crossed Trafalgar Square and tried to see pictures in the famous National Art Gallery, even in day time, realizes what a London fog is on some winter days. This great quantity, which comes from the chimneys used by 6,000,000 people, contained 6,000 tons of ammonia, 8,000 tons of sulphates, 3,000 tons of chlorides and carbon, tar, tin and lead.

The fog and soot not only corrode metal surfaces, but even the stone exteriors of the great palaces, St. Paul's and Westminster Abbey, which holds England's immortal dead, have been damaged. These conditions of corrosion obtain in all cities.

Dixon's Silica-Graphite Paint affords for metal surfaces the best protection known against corrosion by ammonia, sulphates, chlorides and weather. Have you tried it? We have long service records on the leading railroad and manufacturing structures of the country.

THE STUDY OF SPANISH IN THE PUBLIC SCHOOLS

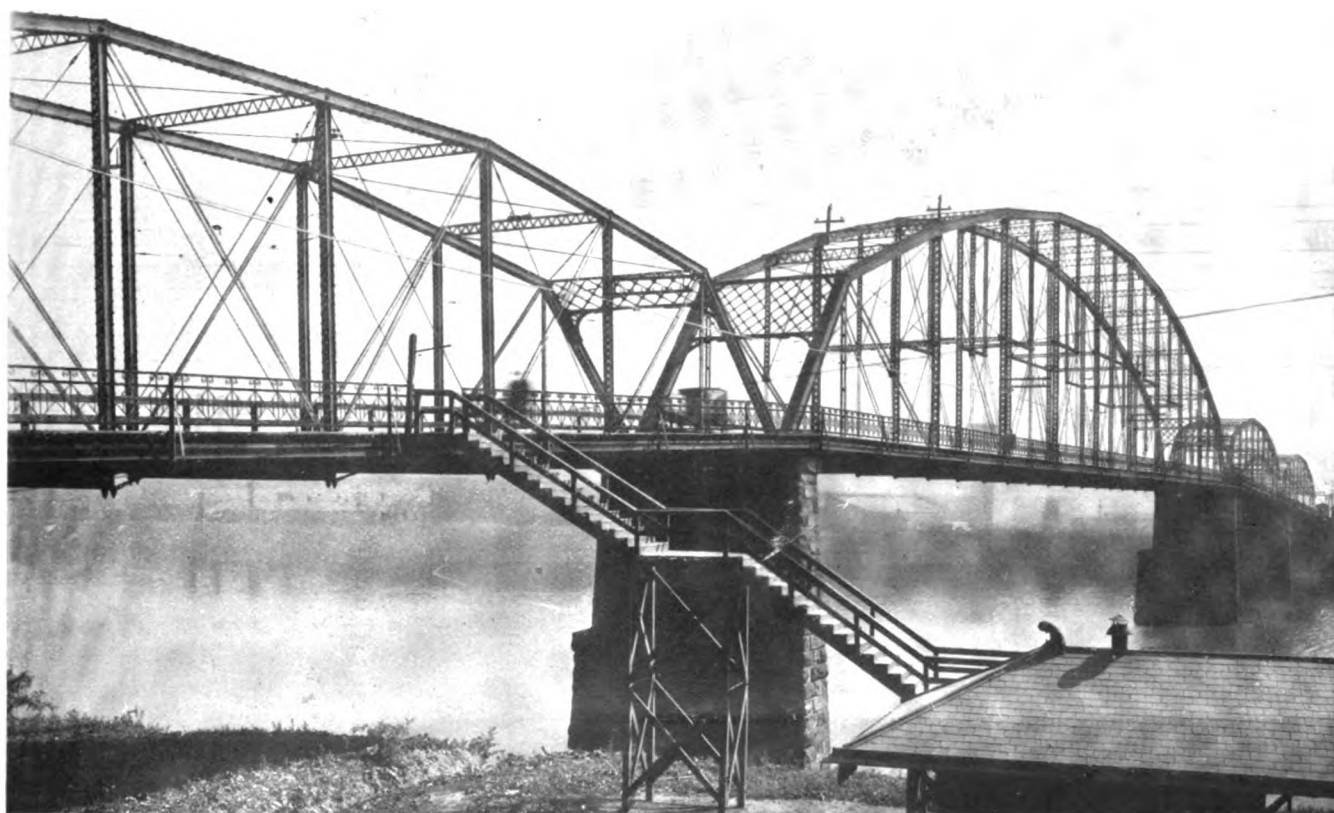
The Pan-American Union has shown great interest in having the study of Spanish introduced in the public schools of the United States and has found pleasure in quoting from a letter received from Mr. Harry K. Wolcott, president of the Board of Trade and Business Men's Association of Norfolk, Va. The quotation is as follows:

"As a result of the suggestion made at the Pan-American Conference last spring, that Spanish be added to the course for students in the American public schools, I take pleasure in reporting that through the efforts of our Board of Trade and Business Men's Association that language has been added to the list taught in the Norfolk City High School."

HOT WEATHER LUBRICATION

In hot weather the man who drives an automobile must be particularly careful in the lubrication of bearings. The heat causes oil and grease to become thin and unless much care is taken, there will be burnt or stuck bearings.

The best possible safeguard is Dixon's Flake Graphite. The Dixon flake is the thinnest and smoothest graphite known. The thin flakes become firmly attached to the bearing surfaces and build up a veneer-like coating of wonderful smoothness and endurance. The coating of graphite prevents the actual contact of the metal bearings and makes the oil or grease to thoroughly lubricate without danger of overheating.



**BRIDGE OVER ALLEGHENY RIVER,
NEW KENSINGTON, PA.**

This structure is owned by the Colonial Trust Company of Pittsburgh, who as private owners have pursued a course of maintenance and preservation thoroughly consistent with the value of such a property. Six years ago this structure was painted with Dixon's Silica-Graphite Paint and notwithstanding its location, close to many large plants and passing as it does at either end over railroads and subjected to the abuse of smoke, gases, etc., it has needed only some slight attention which occurred during the summer of 1911 at the places under which the railroads pass. So well has Dixon's Silica-Graphite Paint preserved this structure that it remains today in very good condition, despite the attacks of so many destructive influences surrounding it.

Mr. Nathan Eyster, Assistant Secretary of the Colonial Trust Company, and Mr. Hermann Laub, Consulting Engineer, who together determined upon the use of Dixon's Silica-Graphite Paint, have again signified their intention of using the same paint which has served them so durably. To all who contemplate spring painting, this evidence, only a unit in our records, is presented so that they may "go and do likewise."

ONE CENT POSTAGE

At last bills for one cent letter postage have been actually introduced in Congress. U. S. Senator Theodore E. Burton

of Ohio introduced the bill in the senate and Representative John W. Wekes of Massachusetts presented a similar bill in the house.

Briefly, the bills provide for a one cent postage rate to take effect July 1st, 1912. The preamble of the bill recites the fact that by successive and frequent reductions, the first class postage rate was lowered from twenty five cents in 1843 to two cents in 1883 and since that time absolutely no reductions have been made. The bill further outlines the fact that first class mail is producing annually a profit of over \$62,000,000, although it was never intended that the department should make a profit on any class of mail.

The bill as framed has received the cordial support of the National One Cent Letter Postage Association, which has its headquarters at 1004-1005 New England Building, Cleveland, Ohio. This organization now has several thousand members, comprising business houses and individuals all over the United States, and is rapidly growing.

All users of first class postage are requested to write their congressmen urging them to support this movement.

THE SALESMAN'S PRAYER

O Lord! I pray thee that I may win,
But if in thy inscrutable wisdom
Thou wilt me not to win,
Then, O Lord! I pray thee make me a good loser.



THE PEOPLE'S SAVINGS BANK BUILDING

The People's Savings Bank Building of Sacramento, Cal., is a modern, fireproof, steel and concrete structure which will continue to serve tenants long after the present generation will have ceased to be interested in presidential campaigns and the higher cost of living.

The People's Savings Bank Building, though much larger than the average bank building, possesses all of the characteristic features which so distinguish the homes of so many of our present day financial institutions from all other structures. The building has proven both an ideal home and a profitable investment for the bank.

To Mr. Henry H. Meyers, Architect, belongs the credit for planning this seven story office and bank building, and to the Thompson-Starrett Co. the work of erection. How well the work was done may be seen by referring to the above reproduction, taken during the course of construction.

The two hundred and sixty tons of structural steel contained in the People's Savings Bank Building is protected with Dixon's Silica-Graphite Paint.

A FRIEND OF EDUCATION

It is from our School Department that we received the following contribution:

A school teacher received the following note from the mother of one of her pupils: "Dear Miss. You writ me about whipping Sammy. I herby give you permission to beet him enytime it is necessary to learn him lesens. He is juste like his father—you have to learn him with a club. Pound nolege into him. I wante him to get it, and don't pay no atension to what his father says. I'll handle him."

DR. GUY POTTER BENTON, in his address at his inauguration as president of the University of Vermont, broke it to his hearers, including the under-graduates of the university, that since the beginning of the last century the limit of efficiency in men had been extended fifteen years. Men are at their best now, he said, up to the age of sixty-five. "This is not the age of the young man. It is the age of the prepared man."

GRAPHITE ABOUT THE POWER PLANT

By RUSSELL R. UX

As a lubricant, the value of graphite became known nearly a century ago, or to be exact about the matter, Rennie in 1829 demonstrated its value as a means of perfect lubrication.

It has been proved that graphite can be used in almost any way necessary, such as feeding it through oil cups, or oil pumps, or placing it directly on the rubbing parts of any kind of machinery.

Quite frequently the inside conditions of their engine cylinders has been brought to the attention of engineers, as in almost all cases they are scored and cut, which causes overheating by an increased friction. It should always be born in mind by the engineer that the cost of lubrication equals the price of the lubricants plus the cost of the friction accompanying their use. Greases and oils are the two best known reducers of friction, but pure graphite possesses certain qualities not possessed by either of those mediums.

Experience has shown me that graphite is the only article which will go directly to the real cause of friction—microscopic roughness,—and practically perfect the metal surfaces by filling in the unevenness, thus producing a mirror-like surface.

Efficiency of greases and oils depends in a large measure upon the varying local conditions, such as speed, pressure, temperature and the amount and way they are supplied to the bearing surfaces. An oil which gives apparent satisfaction at a normal temperature, becomes too thin at a higher temperature and too viscous or thick and gummy when colder. Similar conditions exist also with changes of speed and pressures.

The perfect condition is, of course, where a lubricant is used of the very least viscosity, sufficient to keep the metal surfaces apart; but in attempting to do this there is always danger that varying conditions may reduce the viscosity so that oil cannot support the load, and then consequent cutting and heating result.

This danger is entirely eliminated when graphite is used in connection with oil or grease, as surface-to-surface contact is unlikely when the thin graphite coating is formed.

As a cylinder lubricant graphite is coming into more and more common use either with oil or alone. It completely fills up small holes and sometimes very small cracks, apparent in cast-iron cylinders.

When water happens to come in from the boiler or other source and washes the cylinder oil away, or if from defects in oiling appliance the cylinder commences to groan, as it quite frequently does regardless of close attention and care, graphite will instantly stop groaning if fed with a little oil through the hand pumps.

Graphite reduces considerably the amount of cylinder oil required for given conditions of service; this is generally noticeable in the better behavior of the engine, easier handling of the valve gearing and last but not least, the indicator cards which will show it most effectually.

The objection raised against graphite as a cylinder lubricant is the supposed inability to eliminate it from the exhaust steam which is quite frequently used for a score of purposes.

This objection is generally raised by men not conversant with the use of graphite for this purpose; for any eliminator,

settling tank or skimmer that takes out a fair percentage of the oil, will positively remove all graphite.

I have known a fireman who had charge of a large number of return tubular boilers, to put into each drum after cleaning one large handful of graphite, which he claimed made it easier to clean the tubes and surfaces of the boiler inside. He also proved it, for by simply tapping the boiler shell with a hammer the scale fell off and the graphite was very noticeable in small particles on the scale where it adhered to the iron.

Graphite can be used on pipe threads to great advantage, as it allows the pipes and fittings to be disassembled after long use without breaking or squeezing out of shape. It is equally useful for the threads of flange bolts, valve stems, packing, etc.

When put up with linseed oil and other oils for painting purposes, I have known graphite to give most excellent results on stacks and boiler fronts.—*Practical Engineer.*

OILING THE MOTOR

"Giles," said DeWhizz to his chauffeur before he started on his run across the State, "have you oiled the machine thoroughly?"

"Yes, sir."

"Are you sure, Giles?"

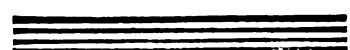
"Yes, sir. I have filled the spring cups and the engine reservoir, and I have greased the cornet-a-piston, the pluribus unum, the exhaust pipe, the muffled tread, the thingumbob, the rigamajig and both the hot boxes."

"Are you sure those are all the parts you have oiled, Giles?"

"Yes, sir."

"You have forgotten the most important place of all. Take the can and squirt a few drops of oil on the license number, so that the dust will collect on it and make it hard to read. Always remember to lubricate the license number, Giles."

—*Lippincott's.*



ALL Dixon Pencils
A take good points
 —long, medium or
 stubby. There's only
 one degree of best.
 It's in

DIXON'S
AMERICAN GRAPHITE
PENCILS

Send now for Dixon's
 Guide for Pencil Users.
 Tells what sort to select
 for all uses.

JOSEPH DIXON CRUCIBLE
 COMPANY, Jersey City, N. J.





JOSEPH DIXON, ONE OF THE WORLD-MAKERS

By ELBERT HUBBARD

A short time ago Mr. Andrew Carnegie supplied us a list of twenty men who have practically made the civilized world what it is today.

The publication of this list created a good deal more than a ripple on the literary sea.

Among others, I was invited to supply a list of twenty men who had influenced the world most, and here is the list of the great men who, in my mind, are best entitled to the title of world-makers:

1. Pericles, who took the treasure of Delos—a fund raised for war purposes—and used it to build the most beautiful city the world has ever seen. The influence of Pericles—in architecture, sculpture, oratory, literature, the drama, physical culture—still endures and animates and inspires every worker in the arts.

2. Aristotle, the world's first scientist, to whom very much of our scientific terminology now traces. Aristotle organized the first herbarium, the first geological collection, the first zoological garden. He taught the world that health, sanity and happiness are to be obtained only through an understanding of and compliance with the laws of Nature, and a love of Nature.

3. Michelangelo, a workingman who sanctified manual labor; the first of modern architects; a poet, a painter, a sculptor, an engineer, a worker in the metals. Millions upon millions of simple people today look upon his work and are uplifted by it.

4. Columbus, who gave the world a continent, even though he died in chains.

5. Benjamin Franklin, discoverer, inventor, businessman, financier, diplomat, philanthropist, philosopher.

6. Gutenberg, inventor of the art of printing from movable types.

7. Watt, the practical inventor of the steam-engine.

8. Arkwright, inventor of spinning and weaving machinery.

9. Stephenson, inventor of the locomotive.

10. Adam Smith, author of *The Wealth of Nations*, the first book that treats economics as a science, and the first man who claimed that civilization is the result of our activities and not a product of abstract thinking.

11. Thomas Jefferson, the only democrat the world has ever seen; who taught the principles of a Republican form of

government and founded our public school system; a man singularly patient, creative, loving, generous, gentle and with whom the world has not yet caught up.

12. Charles Darwin, discoverer and teacher of evolution.

13. Joseph Dixon, scientist, inventor, chemist, machinist, sociologist, humanitarian.

14. Lincoln, emancipator and statesman.

15. Edison, applier of electricity and common sense.

16. Hargreaves, inventor of the spinning-jenny.

17. Alexander Graham Bell, the inventor of the telephone.

18. Perry G. Holden, who through the selection of seed-corn has shown the world how to double its productive wealth per acre.

19. George Westinghouse, inventor of more than fifteen hundred mechanical and electrical appliances, most important of which, perhaps, is the railroad air-brake.

20. Friedrich Froebel, through whose teachings corporal punishment has been abandoned and who gave the world a new system of education. All of our progress along the line of pedagogy has been through the application of the Froebel method introduced in the higher grades, and whether Froebel knew it or not, he was heir to the ideas of Aristotle, who lived three hundred fifty years before Christ.

This list of the world's great men has been widely printed and extensively commented upon.

It has received the commendation and endorsement of many of the biggest and best thinkers in America today.

Quite a number of high schools and colleges have taken this list as a basis for study as to the influences that have most benefited and uplifted the world.

Some of the men in this list I have written about at length. The others I intend to write on.

But just now I want to say a few things about Joseph Dixon, a man whose work has profoundly influenced civilization, yet strangely enough, a man of whom the world at large knows little. In fact, if you have the good fortune to have a little silver jingling in your pocket, not to mention gold, the coins have been minted through appliances invented by Joseph Dixon.

You reach for a lead pencil and you make use of another of Dixon's inventions, for let it be known that the lead pencil is a little like the guinea-pig, for the guinea-pig isn't a pig and it isn't from Guinea. The modern lead pencil isn't made from lead or from anything that even contains a chemical trace of lead.

There is no article in such universal use as the lead pencil. James J. Hill had his photograph taken the other day in New York and in his hand he holds a Dixon Pencil, the brand plainly visible. And here I am, writing this article with a Dixon lead pencil and have half a dozen more Dixon lead pencils in my pockets, or strewed over the table.

Everybody steals lead pencils without any qualm of conscience, just as we "lift" umbrellas when they happen to be handy.

In dining cars, a worthy colored man tells me, four out of five of the male patrons pocket the railroad lead pencil after making out their order.

Joseph Dixon was the first manufacturer of lead pencils in the United States; in fact, much of the machinery used in pencil making today is of his invention, although it was not

until 1872 that the Dixon Company put its first lead pencils on the market under the Dixon name, the first gross of pencils being sold to a dealer in Morristown, New Jersey. The Dixon Crucible Company is now one of the largest manufacturers of lead pencils in the world.

The consumption of lead pencils in America is about two hundred million a year; that is to say, we use two lead pencils to a person.

The test of civilization is the consumption of lead pencils.

In certain states in the Union the consumption of lead pencils is only about half a pencil to a person. In other states, there are three or four pencils used a year per person and in one state there are six pencils used to a person. It would be unfair and perhaps indelicate and arouse needless sectional antagonisms, to mention the states that used most or least in the way of lead pencils.

The pad-and-pencil habit is a wonderful one, and anyone who has it will become a distinguished individual. The idea is simply this: When the thought flashes through your electric sky-piece, seize upon it and get it down in black and white on the pad. This is the great Dixon idea, put forth by Joseph Dixon, but upon which there is no caveat, copyright or patent. Dixon was an average man who evolved into a genius through the habit of making the best use of his energies. Life to him was a precious privilege. He prized his time and valued his thoughts.

It has well been said that one can not enter a shop, a store, a bank or a factory without seeing things that had their origin in the fertile brain of Thomas A. Edison. In fact, you can not look out of a window in any city of Christendom but that you see things bearing the mark of Edison.

It is almost equally true of the work of Joseph Dixon, although, of course, his work was less spectacular than that of Edison; but Edison in degree built upon the work of Dixon and made use of many of Dixon's appliances and ideas, all of which Edison freely acknowledges. Edison is so rich in ideas that he has always been willing to give due credit to others. We build upon the past, and all the days that have gone before have made this day, this time, this place possible.

In the laboratory of Thomas A. Edison at Orange, New Jersey, are to be seen the retorts and crucibles invented by Joseph Dixon.

Civilization is a matter of collaboration, and when we sit down to dinner we make use of the net results of the work of ten thousand men and women.

Joseph Dixon was born at Marblehead, Massachusetts, in the last year of the last century. He died in Jersey City in 1869.

He possessed from boyhood all of the restless, noble discontent that has made the Yankee nation supreme in the world of invention. His was the restless mechanical brain. Nothing was ever good enough. It must be made better. He looked upon raw materials, and in the vividness of his imagination saw a completed product.

His first invention was a machine for cutting files. Before Dixon's day files were made by hand. He became a printer and not having the money to buy metal type, he set to work engraving on wood and made his type of wood. Incidentally, he became a skilled wood-carver.

Later, he invented a matrix for casting type, and the melting of materials for the making of type led straight to the

manufacture of a crucible that would withstand heat and not fuse with the metal that was being melted.

By the time Joseph Dixon was twenty-one, he was regarded in New England as an expert chemist. He studied medicine with intent to become a practising physician, but, seemingly, he lost faith in drugs, and this at a time when all the world believed in the efficacy and excellence of poisons as remedies.

Joseph Dixon said, "If you are immersed in your work and do not overeat and underbreathe, you will never get sick." An amazing proposition in its simplicity, when we think that the statement was uttered in 1822.

He took up the business of an optician and made lenses, grinding the lenses with aid of graphite, a plan that is still continued.

He experimented on the work of Daguerre and was the first man to produce a portrait by means of a camera. He showed Professor Morse how to take portraits with the aid of a reflector and this use of the reflector was utilized later in telegraphy, and especially in the use of the electric cable. He was the first man to build a locomotive with a double crank and I believe was the man who showed Fulton how to arrange his steam engines so they would not get stuck on the center.

He perfected the process of lithography. From printing with movable type he began to print on a flat stone surface and from printing with the use of lithograph-stones he began to print by the solar process, which, of course, is the basic idea in photography.

At this time bank notes were easily counterfeited. Joseph Dixon invented a scheme of printing bank notes in colors and had the process patented. It seems, however, that other printers took up the idea and Dixon allowed them to use the process without paying royalty and thus the idea drifted into common use and became, as it were, current coin of the realm.

The printing of money led to the coinage of metals and Dixon invented a crucible made from graphite for the melting of gold and silver. Later, this crucible was adapted even to melting steel and materials that formerly had defied the metal worker. Joseph Dixon was the first man to use collodion for photographer's use.

And the wonderful system of grinding lenses, perfected in America by that great and good man, Mr. John Brashear, who has done better work in his own particular line than any other living man, traces a direct pedigree to the fertile brain of Joseph Dixon.

(To be Concluded in May GRAPHITE)

IN a little circular issued by the Geo. Worthington Company of Cleveland, Ohio, we find the years of industrial depression given as follows:

1814, 1818, 1826, 1837, 1847, 1857, 1867, 1873, 1882, 1890, 1893, 1894, 1895, 1896, 1900, 1903, 1907.

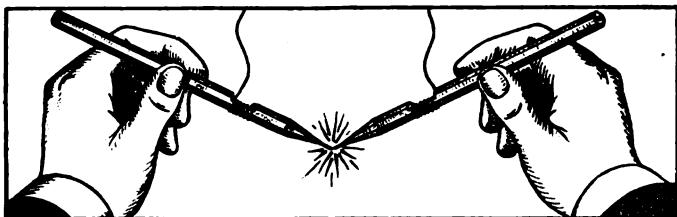
By this it would seem as though the years of industrial depression were getting to be altogether too frequent. We are glad to be informed that although the years of depression have been punched as it were, that just as soon as we get under way, we will rapidly leave them far behind with no recurrence to bother the present generation.

DIXON'S graphite publications sent free upon request.

LEAD PENCIL ELECTRODES

By A. A. SOMERVILLE

Furnace electrodes frequently consist of carbon rods, and if there is a short gap between them, forming a break in the circuit, the current jumps across that gap, forming an "arc." The "arc" is so called on account of the curved shape taken on by the lighted area. There is a big resistance to the flow of current right at the arc, so that a great amount of heat is generated here at the expense of electrical energy, and as a result of the large amount of heat liberated in a small space, that area attains a very high temperature.



A LITTLE ELECTRIC WELDER MADE FROM LEAD PENCILS

As large electrodes are needed for use in furnaces where great masses of metal are to be melted, so small electrodes are adapted to finer or more delicate work. For instance, if two very fine wires, smaller than ordinary pins, or the size of a hair, are to be fused together by means of an electric arc, then very small terminals must be used to lead the current to the place where it jumps across the gap, or forms the heating arc.

The lead or graphite in a lead pencil is a form of carbon. In reality it is a sort of composition matter consisting of graphite and some kind of clay or binding agent, used to make the particles of graphite adhere when moulded into a long stick or rod of a suitable size for use in a lead pencil. This composition material, however, does not melt easily, and conducts electricity, so it may be used the same as a stick of carbon for an electrode.

Two ordinary lead pencils costing only a cent apiece may be used. They are first sharpened as if they were to be used for the usual purpose of writing. Then a small notch is cut in one side of each pencil, laying the lead bare at a position about two inches from the sharpened end. A small copper wire is wound around the pencil and into this notch, thereby making contact with the exposed lead or graphite. By means of these small wires the pencils are connected to larger wires, which in turn are connected to a switchboard or source of electric current supply. At some place in the circuit there should be a resistance to prevent short circuiting and also to control the strength of the current. As the wooden sheath on the pencils offers sufficient insulation they may be picked up, one in either hand, and no electrical effect will be felt by the person so doing. If the pointed tips are touched together a fine little arc will be formed, not much larger than the tips of the pencils themselves. The temperature of this arc, however, is such that the fine wires or small quantities of metal may be melted readily.

These little lead pencil arcs may be used to fuse very small gold or silver wires or platinum thermometers, or wires for tungsten or tantalum lamps. The bead or globule of molten metal formed on the end of a fine wire need be no larger than a small-sized grain of sand.—*Popular Electricity*.

SELF IMPROVEMENT

No stronger proof of the love of a man for his employer is shown than in the affectionate keeping of letters received from that employer. To a marked degree the late vice president and general manager of the Dixon Company, Mr. John A. Walker, held the affection of all the Dixon salesmen and every now and then a letter turns up written by Mr. Walker that would not be parted with by the owner for many times its weight in gold.

We have just received copy of one of these letters which is well worth printing:

"It is the duty for us all to improve—to do better each day than we did the day before—this includes us all from boss to office boy. May I point out one thought?

Salesmen differ in temperament, in brains, in nerve, in assurance and in results.

Up to a certain point you do good work—beyond that you need a little steering. One point where men differ is in size of orders. One salesman goes in to sell crucibles—something about the salesman makes him get a big order. Another salesman goes to same place, sees same buyer and gets an order only one-quarter the size. The difference is in the man. The small order man strikes too low; he don't aim high enough. The buyer sees something in this man's eye which tells him, the buyer, that he can put the salesman off with, for instance, a half dozen crucibles. With the other man they never talk less than fifty to one-hundred crucibles.

It is the same way with Dixon's Lubricating Graphite. One man sells five pounds; another salesman sells same buyer fifty pounds.

Can't you learn the trick of the bigger order at the one time?

If a man wants only six crucibles, talk a cask; if he wants a cask talk one-hundred crucibles.

If he wants lubricating graphite suggest a barrel and compromise on one-hundred pounds instead of five pounds.

All orders are welcome of course, but some men can get bigger ones than others. Won't you please try for the big ones?"



The Dixon Company has just put on market a new chain graphite, especially intended for lubricating the chains of motor trucks and pleasure cars.

This preparation is put up in sticks, cylindrical shape, 2" x 8", encased in a neat cardboard carton and weighing about one pound each. It is made of the same material as the Dixon Bicycle Stick Graphite, with which every bicycle owner is familiar.

It is by far the most convenient chain lubricant on the market, for a bar may be carried on the car ready for use at any time. To apply, it is simply necessary to rub the bar against the sprocket side of the chain. The "big stick" makes it easy to keep automobile driving chains in first class condition. Unlike oils and greases, it will not collect dust or dirt.



CRUCIBLE HISTORY

in brief, is that the graphite or plumbago crucible was invented by Joseph Dixon in 1827.

From those early days to the present time all of the experience that we have gained, we have made use of in the buying and testing of our various materials, and in the bettering of our methods in every way.

Our experience has also taught us how to more skillfully handle our materials and all of the appliances for crucible making.

In the Dixon Crucibles of the present day you have as an improved standard a make of crucible that has always been considered the standard.

You will have the satisfaction of knowing that every part of the crucible in the way of material and in the way of workmanship, is the best that has been discovered or employed in crucible making.

There is nothing left to chance or guess work. No other crucible manufacturer employs a chemist with the knowledge and experience of the chemist employed by the Dixon Company.

The factory man who makes use of the Dixon Crucibles has the satisfaction of knowing that he is getting the very best crucible that it is possible to make, and the number of heats that are gotten from the Dixon Crucibles shown by the letters that we are receiving, is additional evidence that our claims are founded on absolute facts.

The Dixon Crucibles are unequalled and the price is right. If you would like a copy of our new crucible booklet, it will be sent you with pleasure and free of cost.

GRAPHITE GREASES

We are sometimes asked why the Dixon Company manufacture graphite greases when we say through our salesmen and circulars that Dixon's Flake Graphite may be added to any oil or grease as occasion requires.

Years ago the Dixon Company decided to market graphite greases for the following reasons:

1. As a ready and convenient way to apply graphite as a lubricant.
2. To sell graphite and not to sell an oil or grease without the graphite.
3. To insure that the user might get the right material for the work, as there is a great deal in having a suitable base to start with—that base being flake graphite.

At no time has the Dixon Company marketed a grease without graphite. At all times the graphite used in the lubricant has been that form of graphite particularly suited to the work.

For heavy bearings we have used in our grease lubricants a large No. 1 flake of graphite. For lighter bearings we have

used the No. 2, or small flake graphite. For other uses, we have made use of the finely powdered flake graphite, which though finely powdered, was nevertheless a flake.

Broadly speaking, graphite in general might be considered as a lubricant, but so long as Dixon's best Flake Graphite Lubricants cost but a trifle, or perhaps no more than other graphite lubricants that are offered, why take any risk?

Dixon's Flake Graphite and graphite lubricants are the ones that have been chosen as standards by the great railroad companies and other transportation companies, as well as by the great power plants and engineers in general. This alone should decide what graphite lubricant to use.

When one understands that any impurity or adulterant that may be used takes on the color and appearance of the graphite itself, it will be readily seen that no graphite should be used that has not back of it the reputation of a well known manufacturer, not only well known, but experienced in manufacturing lubricants.

There are on the market today grades of graphite offered as lubricants that are not at all suitable as lubricants if best results are to be attained, although that graphite may be a superior quality of graphite for other purposes. There is as much difference in graphite as there is in building sand. It is not so much a question of the purity of the sand used for making the mortar as it is a question whether the sand is suitable in its physical characteristics to make a suitable and reliable mortar.

Considerable has been written and said in regard to the so-called purity, or carbon content of lubricating graphite. This means nothing alone; it is the physical properties of the graphite that makes it suitable or not suitable as a lubricant.

Dixon's Ticonderoga Flake Graphite is the best because it is the thinnest, toughest and most unctuous graphite on the market. We do not use it in the manufacture of lead pencils. We do not use it in the manufacture of our crucibles, and yet graphite suitable only for lead pencils or for crucibles is offered to inexperienced users as a lubricant for their machines. Why not always get the article most suitable for your use?

INDUSTRIAL NOTES FROM THE INTERNATIONAL ASSOCIATION OF MANUFACTURERS

The International Harvester Company today filed, through its legal representatives, its appeal in the United States Supreme Court from the judgment and decree of the Supreme Court of Missouri ousting the company from the privilege of conducting business in that state.

The National Surety Company issued a "hold-up" policy for \$5,000,000 to Kountze Brothers, bankers, covering the removal of bonds, stock and other securities and valuables from the wrecked Equitable Building across the street. The policy is said to be unique in form. It protects the bankers for loss by theft during the transfer.

The Nodals Match Company, one of the largest firms of match makers in the world, with headquarters in Norway, is to establish a \$1,000,000 plant in this country. As a site the corporation has bought 250 acres at Verplanck's Point at Peekskill. The factory will be the largest match plant in the world. About 5,000 persons will be employed.



WINDOW DISPLAY OF THE J. K. GILL CO.

Good window displays are evolutions of our artistic and commercial instincts. They are essential to stationers for it is often their only profitable form of advertising. The above reproduction shows the window of the J. K. Gill Company of Portland, Ore., in which a "shower" of Dixon Pencils makes a very attractive center display. This window is superbly arranged and reflects originality throughout. The Dixon Company is always glad to assist in the preparation of window displays and invites the attention of stationers to its variety of posters, show cards, etc., which has often proven of material aid.

A STENOGRAPHER'S STUMBLE

A judge in one of our Middle West States advertised for a stenographer with experience in legal work. A number of applicants called at his office for the purpose of making application for the position. Each applicant was given a trial to test her speed, accuracy, etc. Among the applicants was a young lady whose anxiety to make a good showing evidently unnerved her. The judge dictated to her a few sentences in legal language, one of which was, "That would give him time to complete the devastation of the assets." The sentence as transcribed by the young lady on the typewriter read as follows: "That would give him time to complete the devil's station with a hatchet." Although much amused at her ludicrous blunder, the judge permitted her to go away without telling her of her mistake.—*Case and Comment.*

DIXON'S graphite publications sent free upon request.

MORE THAN SATISFACTORY

At the Santa Monica Road Races Dixon's Motor Lubricants were in almost universal use. Drivers of national reputation voluntarily expressed their written approval of Dixon's Motor Lubricants. These letters we have been reproducing each month in GRAPHITE since our January issue.

Our fourth letter is from Mr. T. H. Carrigan of Carrigan Brothers, the well known Midland Car dealers. Mr. Carrigan, whose interest in the automobile industry extends much further than the passive occupation of selling, writes as follows:

CARRIGAN BROS.

1006-1008 South Olive Street,

LOS ANGELES, CAL., Nov. 8, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—We are very glad to say that we used Dixon's Graphite Grease in our Midland Car through the Santa Monica and Phoenix races.

It is our intention to use your goods and recommend them in the future to the users of our cars.

We cannot recommend too highly the goods which proved more than satisfactory in two hard races.

Yours respectfully,

T. H. CARRIGAN.

ALL MACHINERY would become as sounding brass and tinkling cymbal but for lubrication—that's the cue for Dixon's Flake Graphite.

APPRECIATIVE SCIENCE TEACHER

We have received the following communication from a science teacher, which may be of interest to others interested in teaching:

"I wish to thank you for your exceedingly full collection or exhibit of graphite and graphite products for our chemical museum, and it is being put to practical use. I received it just in time to show my class in chemistry the graphite ore and its products. They were amazed to see the fine axle grease and paint and crucibles, etc., made from such carbon compound. It is real life to teach when such firms as yours, the Standard Oil Company, the DuPont Powder Company and others, help a teacher to learn principles and tie their ideas fast to Nature and then live them, thereby making the boy a power and a useful and practical individual instead of a mere machine for the industrial world. I am trying to get samples of other things and to show the complete industrial development of the raw product into useful products demanded by the world at large. Everybody seems to take greater interest in those things in chemistry where I have such complete exhibits as are now given here. It makes all the difference in the world in teaching. This new method is living in Nature and in the world of industry and makes the boy a power instead of making him a machine. Thanks a hundred-fold for your generosity. We all appreciate your honest efforts. I find that all the leading industries have men at the head of the firms who aim at helping others. They respond nobly to any request where the cause is a noble one and has the right ring.

"In the study of your exhibit I can teach more of value in thirty minutes than I can from text book in a day, and can put more horse sense in a thimble, than a text book without the concrete samples, can in a life time."

PAY UP

The man who can pay his bills and doesn't is one of the public enemies who are responsible for the slow recovery of business. He cripples industry, restrains trade and creates a long line of debtors who cannot pay. He is a brake upon prosperity, a dray upon humanity.

He has been a deterrent factor in business the past five years, ranking in depressive effect next to the financial flurry of 1907. The habit of deferring payment, contracted anew in 1907, has become chronic with individuals, firms and corporations and has served to harass business to an extent appreciable only to the bankers who carry the accounts of the retailers and smaller manufacturers.

By withholding payment of one bill a procession of difficulties is formed. A hoards his cash and embarrasses B, who has to put off C, and D is pressed to the wall. The chain of evil, started by the prosperous, reaches down through the ranks of industry, commerce and labor, cramping enterprise, confining trade and galling most of all the men at the bottom of the business structure.

This survival of panic times has become engrafted upon our business system to such an extent that in some circles the pride in being considered "prompt pay" is now regarded as old-fashioned, and skill in putting off one's obligations has come to be reckoned a desirable acquirement.

But the business situation today seriously demands the classing of the deliberate slow-payer with the cheat. His reformation would free the involuntary slow-payer from a plight that is none of his choosing and would make the wheels of business hum with prosperity.

You who can, pay up. Then those who now can't pay will be able to do so. Money will flow faster through the arteries of the country's life, and all the people will be benefited.

—N. Y. *Evening Mail*.

THE COST OF LIVING

We read in the daily papers that George K. Holmes, Chief of the Division of Production and Distribution of the National Bureau of Statistics, in a speech at the Republican Club, New York City, said that among other reasons for high costs was the unnecessary expenditures of the people. He said that this element had increased enormously within less than a generation, and threatens to continue, if not to increase. So dangerous had it become that it might absorb all of the available income of families classed as receivers of medium and low incomes, and also those getting higher incomes were in danger of being engulfed in it. In explanation, Mr. Holmes said that he referred to the enormous increase in the variety of expenditures for unproductive consumption. These are the moving picture and vaudeville shows and the amusement parks of the suburban and interurban railways, with their opportunities for dropping nickels and dimes for momentary gratification. There are the crowds who ride on the trolley cars for pleasure; the summer vacation has become a costly fixture; every Sunday and holiday has its excursions by rail and by boat.

The family telephone has added another expense. There is a multiplication of societies and associations to which dues have to be paid, and whose meetings entail expenses. Prizes must be bought for the card party and home entertainments must be provided. There is a more ready disposition to call the family physician than formerly. The tipping practice is becoming more general. A good-sized shop is required to contain all of the implements and utensils intended for kitchen use.

Mr. Holmes received much applause for his remarks and he was also applauded when he said that it was about time for the consumer to stop playing the part of a man with a grievance. He was sure that the consumer had the remedy in his own control.

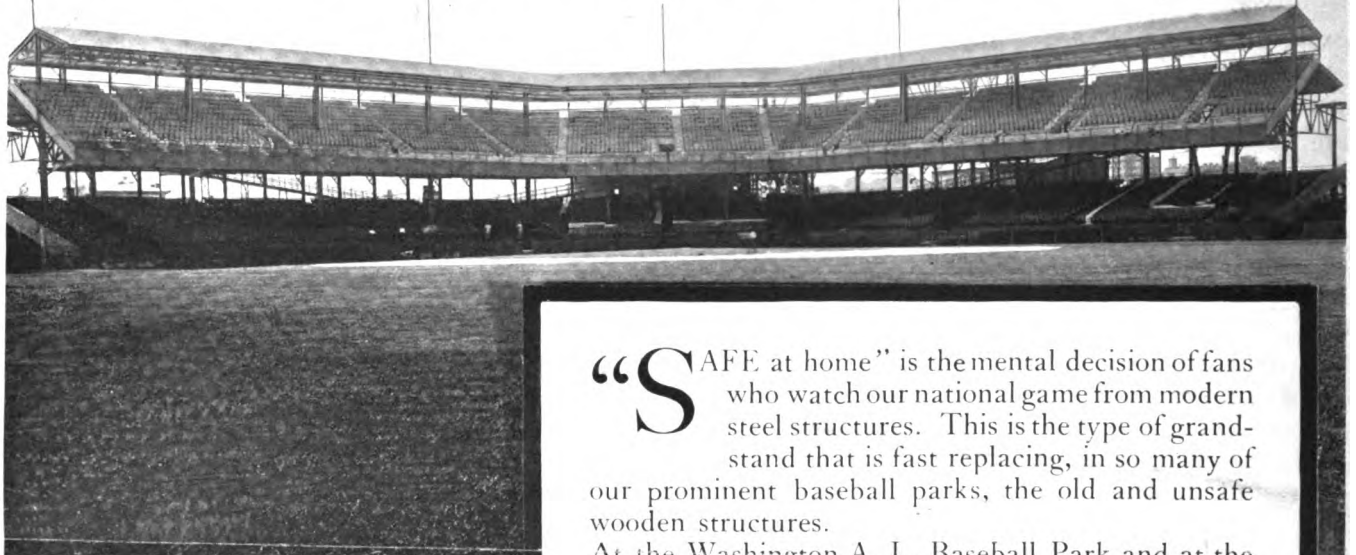
"IT SEEMS cruel to slaughter all those pigs for market," said a Chicago girl.

"I don't know that it's cruel," replied Miss Cayenne. "But when you think of what the packers charge for the meat it does seem a little unfraternal."—*Washington Star*.

IT IS better to note from whence the wind blows and what it indicates, than to insist on finding out the place from whence the straws come.

MAN works from sun to sun, but Dixon's Flake Graphite helps to make his work easier.

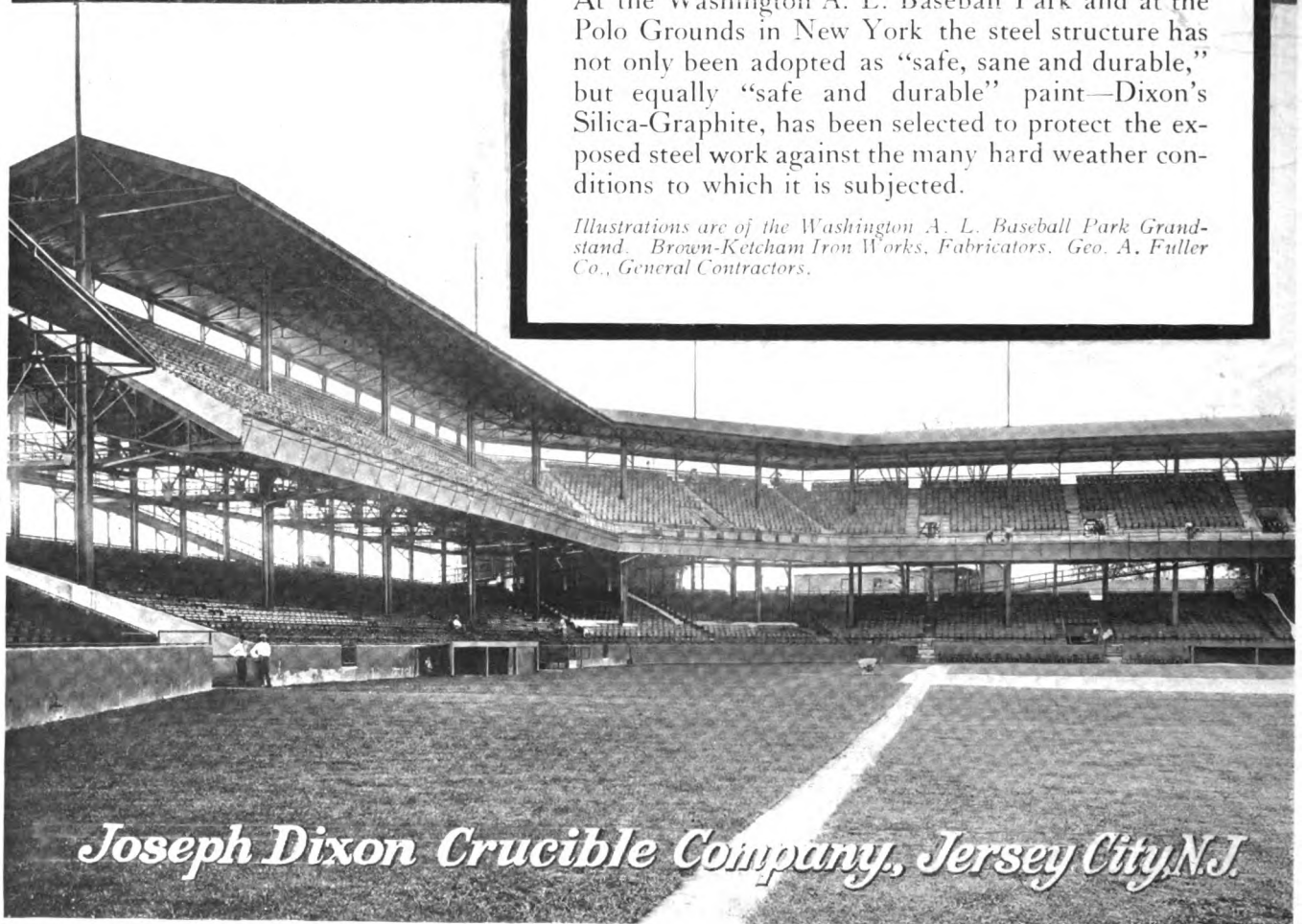
A Home Run for Dixon's Silica Graphite Paint.



“SAFE at home” is the mental decision of fans who watch our national game from modern steel structures. This is the type of grandstand that is fast replacing, in so many of our prominent baseball parks, the old and unsafe wooden structures.

At the Washington A. L. Baseball Park and at the Polo Grounds in New York the steel structure has not only been adopted as “safe, sane and durable,” but equally “safe and durable” paint—Dixon’s Silica-Graphite, has been selected to protect the exposed steel work against the many hard weather conditions to which it is subjected.

Illustrations are of the Washington A. L. Baseball Park Grandstand. Brown-Ketcham Iron Works, Fabricators. Geo. A. Fuller Co., General Contractors.



Joseph Dixon Crucible Company, Jersey City, N.J.

GRAPHITE

VOL. XIV.

MAY, 1912.

No. 5.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

GRAPHITE FOR HOT BEARING

A few days ago I paid a visit to my friend Sam, who runs a large pumping station.

I noticed, as I entered, that there seemed to be quite a bit of excitement going on and all hands were congregated about the crankshaft of one of the 40,000,000 gallon engines.

The usual paraphernalia most in evidence where there is a hot bearing, were lying around accompanied by a $1\frac{1}{4}$ inch water hose. The hose was being applied with indifferent success.

A crackling, sizzling sound came from the bearing, which was steaming profusely, and no amount of water seemed to have any effect; the shaft and quarter boxes were cold. But the face of the drag-cock was about the hottest thing I ever saw.

Sam said the engine had been on for about two hours before it started to heat up. He had tried to cool it off by dumping buckets of fresh oil into the handhole, but this only made it smoke worse. They use a light, cheap oil and a gravity-oiling system, the oil costing about \$75 per 1000 H. P. per month, which does not speak well for his choice of oil. He tried to get grease to the bearing but could not, so he applied his trusty hose.

Sam has great faith in water, but he would lose it mighty quick if he were driving generators instead of pumps.

After he had shut down and taken the cap off and the top shell out, we found that the face of the crank had worn tightly against the frame and the oil could not get to it.

We tried to push it over by setting the quarter boxes in, but the crankpin held it. We could not slide the bottom shell out, as the flywheel was too close. To raise the crankshaft and chip oil grooves in the bottom shell would mean a two days' job and the unit could not be spared that long. So Sam chipped oil grooves in the cap and top shell and put them and the other stuff on again and started up.

Ten minutes later he had the hose going again and the steam and oil were sizzling as merrily as ever.

"Sam," I said, "suppose you take the hose out—it isn't doing any good—and pour graphite and cylinder oil down that hole."

Sam came back with a snort, saying that if that was all I knew it would be better for me to get back to the power house

and my toy engines. "Graphite," he said, "was good stuff to put on water gaskets and to make pipe dope of; but for hot bearings, cold bearings or anything that moved, it was nix."

He had read an advertisement which said graphite was "grand" for bearings and he said he was foolish enough to try some on a little 20 H. P. vertical engine used for driving a circulating pump, whereupon the box got so hot that if he had not used the hose it would have been a case of pouring a box, or perhaps a broken crankshaft. Out in the boiler house, under the vise bench, I found an old teapot, about half full of the kind of graphite used in foundries, which had about as much grit in it as graphite.

I had just bought a five pound tin of graphite, so I went over to the power plant and brought it back, finally persuading Sam to let me try it on his bearing.

It was Hobson's choice with him as he had shut down again. He turned the engine over slowly while I poured the graphite into the oil groove that had been cut in the top shell and cap, pouring about a teaspoonful of graphite and a little cylinder oil for about every ten revolutions. We kept this up for about half an hour and then speeded the engine up to about 25 r.p.m.; its full speed is $35\frac{1}{2}$ r.p.m.

I continued putting a little graphite and a lot of cylinder oil down the groove for an hour longer and left half a can with him. At that time the bearing was pretty hot, but it seemed to stay at the same temperature, and so I took that as a sign that it would cool off in an hour or so.

I visited Sam the next day and found the box about 110 degrees F., and there were two cans of good graphite in the supply cupboard.—CHARLES BENNETT in *Power*.

The above article illustrates very clearly just what we have been trying to emphasize for many years; namely, that there are many kinds of graphite and that the whole principle of graphite lubrication should not be condemned because the wrong grade of graphite is selected for a certain purpose and it fails to give the desired results. Don't put foundry graphite in an automobile engine cylinder and then blame the graphite because the engine is ruined. There are graphites and graphites and there is a right grade for every requirement.

The good graphite mentioned in the article was Dixon's Flake Graphite No. 2.

WHILE probably the following from the *Motor Record* for February is rather late advice, nevertheless it may be worth remembering that "to preserve tires when not in use, always wrap them in paper and keep in a cool, dark place. Clean rust from the rims and polish the inside with graphite to prevent further rust."

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

President—GEORGE T. SMITH
Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
Ass't Treas. & Ass't Sec'y—J. H. SCHERMERHORN

DIRECTORS:

GEORGE T. SMITH	WILLIAM H. CORBIN
GEORGE E. LONG	EDWARD L. YOUNG
WILLIAM MURRAY	HARRY DAILEY
WILLIAM G. BUMSTED	

OFFICES AND SALESROOMS:

NEW YORK SALESROOM, 68 Reade Street.
 PHILADELPHIA SALESROOM, 1020 Arch Street.
 SAN FRANCISCO SALESROOM, 155 Second Street.
 CHICAGO OFFICE, 1324 Monadnock Block.
 BOSTON OFFICE, 648 John Hancock Building.
 PITTSBURG OFFICE, Wabash Terminal Building.
 ST. LOUIS OFFICE, 501 Victoria Building.
 WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
 BALTIMORE OFFICE, 1005 Union Trust Building.
 BUFFALO OFFICE, 72 Erie County Savings Bank Building.
 ATLANTA OFFICE, Fourth National Bank Building.
 EUROPEAN AGENTS,
 Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

ANNUAL MEETING OF THE JOSEPH DIXON CRUCIBLE COMPANY

At the annual meeting of the stockholders of the Joseph Dixon Crucible Company, held at the Company's main office in Jersey City, N. J., Monday, April 15th, the retiring Board of Directors, consisting of Geo. T. Smith, William Murray, Edward L. Young, William H. Corbin, Geo. E. Long, William G. Bumsted and Harry Dailey, were unanimously re-elected.

Officers elected for the ensuing year are as follows: President, Geo. T. Smith; Vice President, W. H. Corbin; Treasurer, Geo. E. Long; Secretary, Harry Dailey; Assistant Treasurer and Assistant Secretary, J. H. Schermerhorn.

There were voted 9,304 shares of a total of 10,000. A number of stockholders attended the meeting and expressed

themselves as well pleased with the company's showing and with future prospects.

FLIES, THE CAUSE OF DISEASE

The National Association of Manufacturers are giving publicity to a little circular published by direction of the Welfare Committee of the Iron and Steel Institute.

Flies are a dangerous nuisance, they carry disease. People are just beginning to wake up to this fact. All flies are dangerous; house flies are especially so, because they are so numerous and because they come in contact with people and foods.

A single family fly lays an average of 120 eggs at a time. Four deposits of eggs may be made by one fly. Under favorable conditions the eggs become flies in about ten days. It takes about ten days more before these flies also lay eggs. It can be readily seen how fast flies will multiply if they are not destroyed. They cannot eat solid food. Such food they moisten before eating; they prefer semi-liquid food. They have no choice between the cleanest kitchen and unmentionable filth.

Flies may infect foods with disease germs. They spread typhoid fever, as typhoid fever is a germ disease. Flies deposit typhoid germs in butter, milk and other foods—therefore, butter and milk should be kept covered and so should all other foods where possible. The germs deposited by flies are especially dangerous to infants and children. Flies like to feed around the eyes of sleeping children, and in so doing, may cause serious eye disease.

Flies must be kept from entering dwellings; all windows should be screened. Foods should be kept screened and tables should not be kept continuously set as they are in some boarding houses.

Several devices may be used for catching or killing flies such as sticky fly paper, wire cage traps, also the burning of pure Persian insect powder. Above all their breeding places should be found and destroyed.

The work of destroying flies is going on the world over. In Bavaria there are so few flies that they can in no way be regarded as a pest. This is due perhaps to the extreme cleanliness of Bavarian cities.

Frankfort also is not greatly troubled with flies. Neither are flies troublesome in Prague.

In France flies are said to be troublesome, especially during May, June, July and August.

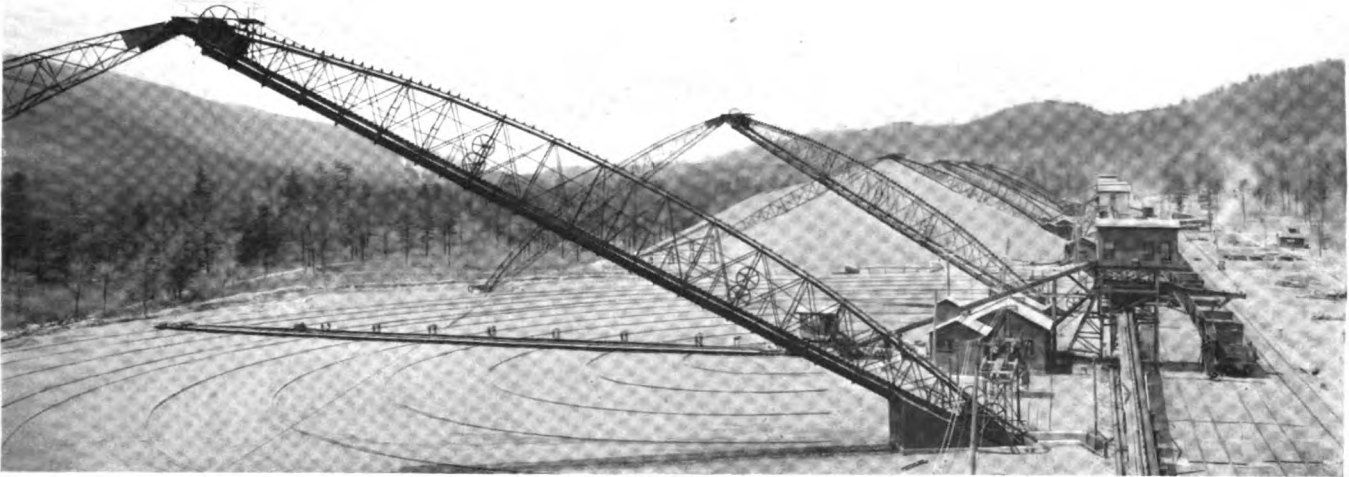
In ordinary years flies are not regarded as troublesome in England, but they are the most numerous in July, August and September.

In Australia, house flies are troublesome from April to October.

In South Africa, house flies are most prevalent during October, November, December, January and February.

In Mexico flies are variable as soon as the rainy season commences. In all the countries mentioned, sticky fly paper of some form or other is considered the most convenient way of catching and destroying flies.

THE mills of the Gods grind slowly, but they do their best work when Dixon's Flake Graphite provides the lubrication.



LEHIGH COAL AND NAVIGATION COMPANY'S COALING PLANT AT HAUTO, PA.

Each morning the man who rides to work is attracted by the street car cards of "Old Company's Lehigh." That woman, the picture of weariness, whom he sees trudging from the coal bin may be his wife and the picture of her unnecessary steps haunts him—or if it be his servant he only wonders if he is a victim of false economy. "Don't blame the cook" is the title of a domestic scene that suggests a remedy for late and badly cooked meals. For how many of us has "Old Company's Lehigh" solved the burning question?

Advertising is not the only thing that has been done well by the Lehigh Coal and Navigation Company, for at Hauto, Pa., the company possesses a coaling plant that is a model of efficiency. Nothing less, perhaps, could be said of any installation made by the J. M. Dodge Company of Philadelphia, for the coaling plant at Hauto is a typical "Dodge System" plant, others of which have been described from time to time in GRAPHITE.

The plant provides a total storage capacity of 360,000 tons, divided into eight piles, four of which have a capacity of 60,000 tons each and the others 30,000 tons each. Each of the trimmers of the four larger piles is capable of storing 180 tons of coal per hour and the four others may be operated so as to store 150 tons each per hour. Thus, the plant, in a ten hour day, is capable of receiving 13,000 tons of coal. The storage system is arranged so that after the coal is discharged from hopper cars into track hoppers and taken by scraper conveyors which deliver to the apex of the pile, the coal is then discharged in such a manner that it never drops more than several inches, reducing breakage to a minimum.

The plant is electrically operated throughout. The accompanying illustration gives an exceptionally good view of one of the four pivotal reloading machines and the tracks upon which it moves. The four reloading machines are located between the eight piles so that each machine covers the entire ground surface of two piles. In this way coal is taken from the base of either pile, delivered to the reloading tower, screened and reloaded on railroad cars. The combined reloading capacity of the machines is 8000 tons of coal per day of ten hours. The average cost of delivering coal to storage and reloading to cars by this system does not exceed five cents per ton.

Dixon's Silica-Graphite Paint was used exclusively to protect the steel work of this plant. Dixon's Paint has given excellent service on a number of large coaling plants and in more than one instance has proven its superior durability on such structures.

FOOD AND ADVERTISING

We are told that Americans consume more than one thousand million pounds of fish annually. If fish is, as it is popularly supposed to be, a brain food, why is it that so many Americans persist in using things simply because they happen to be well advertised. If it is a breakfast food they don't bother to find out whether it agrees with their insides, whether they gain or lose flesh, or even feel better. They buy it and eat it because it seems to be the proper caper to do so.

The same may be said about the use of inferior lead pencils, stove polish or anything else.

WHAT SHAKESPEARE MIGHT HAVE SAID IN "HAMLET"

To paint or not to paint; that is the question:
Whether it pays throughout the year to suffer
The slings and arrows of outrageous winter,
Or to take forethought 'gainst a sea of troubles,
And by opposing, end them. To paint your steel
Is wise, and with GOOD paint you end
The heartache, and the thousand natural shocks
That steel is heir to—'tis a consummation
Devoutly to be wished. To leave steel rust;
Perchance to dream it won't; ay, there's the rub;
For from that foolish dream awakening comes;
Prevention's ounce is worth a pound of cure;
So give you pause and think, kind masters all.
No steel would bear the whips and scorns of time,
The oppressor's wrong, corrosion's deep contumely,
If Dixon's Silica-Graphite Paint were used,
As all the world knows. Made in ONE GRADE alone,
Four colors. It means economy to you
In labor and material, because
It longer lasts; so gain the praise of action,
And adopt it when you paint again.—L. M. STOCKING.



"LIKE OLD FRIENDS, THEY WEAR WELL"

The following appreciation is taken from the Dixon Company's new booklet, "Standpipe Painting," and the italicized words, which are ours, are a characteristic acknowledgment of how Dixon's Silica-Graphite Paint retains the confidence of those who value their own experience:

THE ROLAND PARK COMPANY

ROLAND PARK

BALTIMORE, MD., January 16, 1912.

Joseph Dixon Crucible Company.

GENTLEMEN:—In connection with the development of our property here at Roland Park, we have in service two iron water towers—one of a capacity of 165,000 gallons; the other of a capacity of 220,000 gallons. *We have been using Dixon's Silica-Graphite Paint on these towers for the past fifteen years, and have found it highly satisfactory.*

We are enclosing you herewith photographs of one of the towers, which was taken during the process of a recent application of Dixon's Paint.

Yours very truly,

THE ROLAND PARK Co.,

(Signed) RICHARD W. MARCHANT, JR., Vice Pres.

DIXON'S graphite publications sent free upon request.

LUBRICATING WORMS AND WORM-WHEELS

The Dixon Company makes use of a five ton Pierce-Arrow truck. This truck is driven by worm gear. The truck has been run for nearly a year, and during all that time has been subjected to the heaviest duty. The manufacturers recommended the use of oil only, but the Dixon Company, knowing the great value of its flake graphite as a lubricant, added flake graphite to the lubricating oil, with the result that the condition of the worm and worm-wheel today is surprising to all who have examined the truck, as it is impossible to see the slightest amount of wear.

We note that a correspondent has the following in *Machinery* for January, 1912:

"Worms and worm-wheels under heavy duty often wear out quickly when run dry, or when lubricated with common machine oil. Cases have been known where worm-wheels gave out in three weeks time when lubricated with ordinary oil, and when supplied with a special lubricant, ran continually with no perceptible wear. The following is a compound which has been used with satisfactory results for this purpose: "To one gallon of prime lard oil, add one and one-half gallons of steam cylinder oil, one one-pound package of Dixon's Graphite and two quarts of flowers of sulphur. Mix this compound thoroughly and keep the worm almost entirely submerged all the time."—M. W. W.

We do not know who "M. W. W." is, but in the slang of the present day he is certainly "on his job." The only criticism, or suggestion we can make is that we see no need of the sulphur.

A WRITER in the *Southern Engineer*, giving advice in regard to plunger pumps says: "We used a little dry graphite which was put on the plungers with an ordinary spring bottom oil can and the nuts on the packing glands were hardly more than finger-tight."

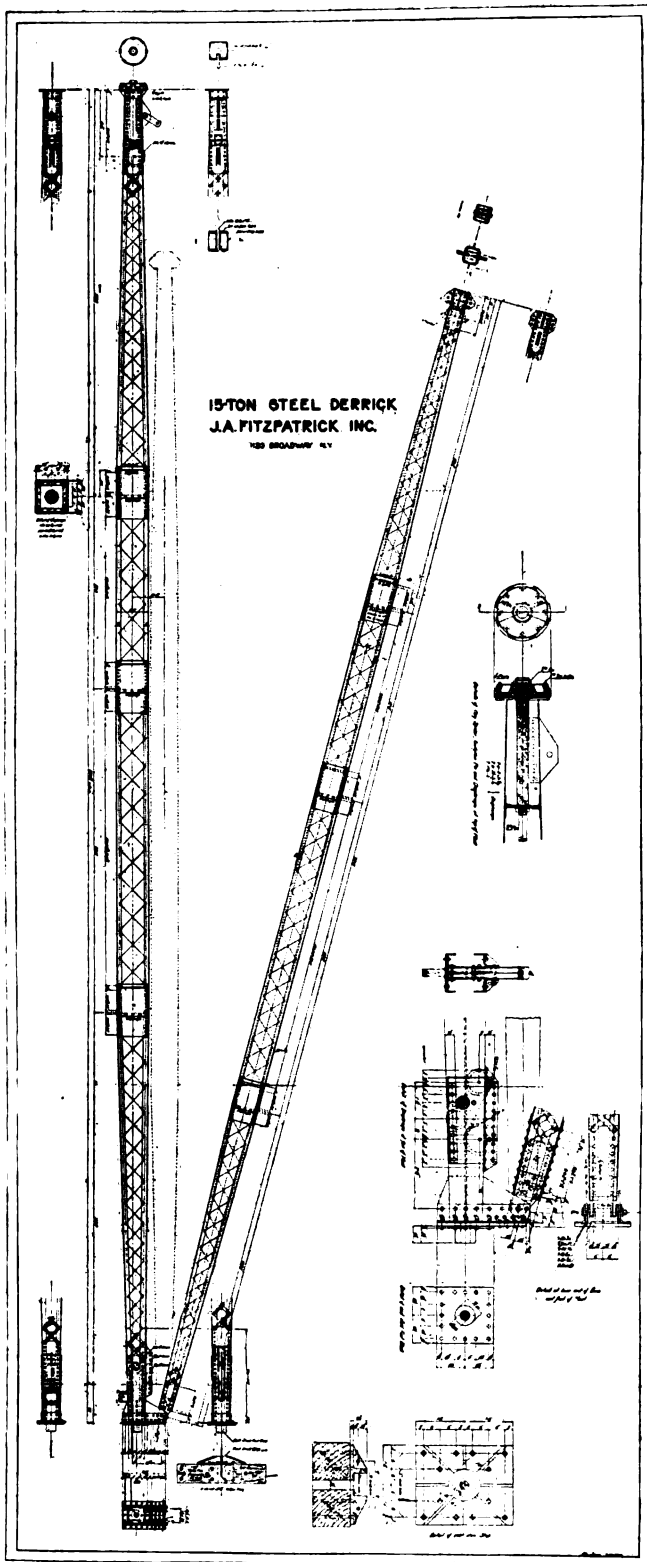
An ordinary spring bottom oil can which is new or made perfectly dry and filled with Dixon's Flake Graphite, is a wonderfully handy article to have around an engine room or the machine shop. The graphite can be easily discharged from the can by means of the spring bottom the same as when the can is filled with oil.

ANTI-TIP BILL; PENALTY IS \$100 A DAY

An anti-tipping bill, promoted by the Commercial Travelers' Association, was introduced in the New York Assembly by Assemblyman Seely, of Steuben County. The measure prohibits tipping only in hotels, restaurants and Pullman cars. Under its terms, a person who gives tips or a person who receives them may be fined \$100 for each day the practice is employed.

"This bill," said Mr. Seely, "is aimed to put a stop to a custom that has made dining out in many cases a nuisance. The people who suffer most from it are the commercial men. The hotel keepers and restaurant owners ought to pay their waiters more."—*The American Stationer.*

THE friction of life does not affect the machinery on which Dixon's Flake Graphite is used.



NEW DESIGN OF STEEL DERRICK

The above illustration is a new design in steel guy derricks. Though built to carry a maximum load of twenty-five tons, the working capacity of this derrick is given as fifteen tons. The derrick is of sectional construction, which type permits of a great saving both in the cost of transportation and in the time required for handling. Though the full lengths of mast and boom are eighty-two feet and seventy-two feet respectively, both may be shortened to three other corresponding heights. In transportation two of these derricks may be easily shipped in one car. This is one of the many advantages that a steel

derrick has over a wooden derrick, which in this case would require three cars for shipment.

One of the most important features of this derrick is the detail of the guy cap or spider, which has been particularly designed to avoid any binding on the gudgeon pin, and as a result the derrick may be easily swung around, loaded to its full capacity, by a single apprentice boy. The stiffening diaphragms at all spliced points constitute another excellent feature, as also does the eccentricity of the boom pin, which detail allows the boom to fall out by its own weight.

J. A. Fitzpatrick, Inc., No. 1123 Broadway, New York City, have built a number of these derricks and are using them constantly on their own work throughout the country. They have also sold many to steel erectors and to general contractors, the latter using them with a bull-wheel for excavation and stone setting.

DIXON'S STOVE CEMENT



To close up the cracks in stoves and furnaces and so prevent the coal gas from escaping around the door and smoke pipe, Dixon's Stove Cement will be found very satisfactory.

Mix Dixon's Graphite Stove Cement into a smooth, thin paste. Dissolve a little salt or molasses in the water before mixing with the cement.

Apply this paste over the cracks. The cement will dry hard and stand an extraordinary amount of heat.

Stove bricks can also be made from this graphite cement by not using quite so much water.

The more this cement is stirred and mixed, and the longer it is soaked before using, the more sticky it becomes and more satisfactory will be the result.—A. L. H.

NO UP-TO-DATE business or professional man would think of doing without the time-saving telephone, and no wise and considerate man having charge of machinery or engines would for a moment think of doing without Dixon's Flake Graphite, which saves both time and friction.

HIS LAST CHANCE

Priscilla had told John Alden to speak for himself.

"I shall do it for you after we are married," she added. Herewith he hastened to seize the last chance.

—Spokesman.

A LITTLE learning is a dangerous thing, but a little flake graphite is a blessing to machinery.

JOSEPH DIXON, ONE OF THE WORLD MAKERS

By ELBERT HUBBARD

(Concluded from April GRAPHITE)

There is considerable controversy as to who it was invented the process of making Babbitt metal, but certain it is that Babbitt got the initial impulse from Joseph Dixon.

Babbitt metal is simply a metal that obviates friction. It is used in the bearings of journals, cranks, axles, etc., and this idea came to Dixon in his work of perfecting the crucible.

Lead pencils, before this, were made of compositions of lead, first being made from straight lead bars.

Joseph Dixon was one of the first to discard lead entirely and use graphite instead. This followed, very naturally, from the fact that in using graphite Dixon got his hands and face thoroughly well blacked.

To utilize the black, then, was the next thing, for Dixon—true Yankee that he was—made money out of his faults, his blunders and his failures, and everything that he did he was able to turn into power with the aid of his enthusiasm, his imagination and his wonderful inventive faculties. It is a great man who can cash in his mistakes. If Dixon did not always find the thing he was working for, he usually got something just as good.

He started the business in Salem, Massachusetts, in Eighteen Hundred Twenty-seven, and continued it in the same plant until Eighteen Hundred Forty-seven.

At that time there was very little demand for lead pencils. It was not a writing age. People were too busy cutting down the forests, getting a living, building houses and doing the necessary work of pioneer times.

Dixon made his lead pencils and then went out peddling them among the people. It was a peddling age, and manufacturers would make up a quantity of their products in their homes and then go out and sell them.

New England was a country of peddlers, and these peddlers educated the people—and themselves. You can't hibernate and get an education. Wherever they went these Yankees distributed all the knowledge they possessed, and a few things besides. They picked up wisdom and passed it along.

Emerson, in his essays, speaks of the "wonderful things sent us from Connecticut." Emerson had a hired man by the name of Henry Thoreau, who made lead pencils. Henry Thoreau's father learned the business in the shop of Joseph Dixon over at Salem, where witches once held high jinks.

At Salem lived a man by the name of George Peabody, who was a friend of Dixon's. Peabody clerked in a country store and afterwards became a peddler, and among the wares that Peabody sold were stove polish and lead pencils, made by Joseph Dixon.

Henry Thoreau did not have quite enough business ability, being inclined more toward using pencils than selling them. So his lead pencil business languished, and the spiders and mice accepted the receivership.

Peabody went down to Georgetown, in the District of Columbia, founded a big business in the Yankee notion line, drifted off into drygoods, became a banker, went over to London and did things in the line of philanthropy so big that they astounded and astonished the world.

Peabody is the world's first philanthropist; his name is deathless, on account of his having introduced altruism into

business, being the first man, practically, who regarded business as public service, and wealth as a trusteeship.

The center of the lead pencil business seemed to drift from New England to New York, because in New York there were wholesale dealers who took the entire product of manufacturers and distributed it for them, saving the manufacturer the trouble of going from house to house to sell his product.

Stoves are practically a very modern invention. Seventy-five years ago, most everything was cooked in fireplaces, in metal pots.

When the stoves came in and rust began to disfigure the tidy housewife's necessary possession, stove blacking seemed a very desirable thing.

Dixon used his graphite idea and made the first stove polish.

The idea came to him, of course, through the discovery of what a wonderful polish he put on his hands in working in the graphite, making crucibles.

In Eighteen Hundred Forty-seven, Dixon moved to Jersey City, which was a suburb of New York. He bought land out on the prairie for fifty dollars an acre, and started his business of making crucibles, stove polish and lead pencils. But the principal business was the supplying of crucibles to men who were melting metals. One of the best customers for the Dixon crucible was our Uncle Samuel, and these crucibles were bought for use in minting gold and silver. Later, Uncle Sam ordered Dixon lead pencils, a hundred gross at a time. The United States Government has always been one of the best Dixon customers.

In the year Eighteen Hundred Sixty-seven, Dixon, feeling that the business was going to grow as the years progressed, and as the demand for graphite articles increased, and realizing that his own strength was failing, formed, under a Special Act of Congress, a corporation known as the Joseph Dixon Crucible Company. At that time the making of crucibles was a practical monopoly—no one knew how to do the trick as well as Dixon.

This business continues now, constantly growing, constantly enlarging with the spirit of the times. It is the biggest institution of its kind in the world.

The success of Joseph Dixon in a business way was based on the use of graphite. Graphite is known as plumbago or black lead. It is commonly called a mineral. It is widely diffused, being found almost everywhere in the wide world, but only in a few places in sufficient quantities so it can be mined to advantage.

Graphite is a crystal, formed, it is believed, from the remains of the plants known as the Plumbaginaceæ, mixed in a certain degree with animal remains.

It has the qualities somewhat of mineral oil, and also partakes of the elements of anthracite coal. It is anthracite with a college education.

The same substance of which Nature makes asbestos is distributed, in degree, through graphite.

It is found in very thin layers between the strata of rocks. A graphite deposit six inches through is deemed well worth working.

A large amount of the graphite used in America comes from Ceylon. However, the Dixon Company own deposits at Ticonderoga, New York, and the Ticonderoga graphite is used extensively by them. There are also deposits of it in New Hampshire.

Joseph Dixon's first introduction to graphite was through an old farmer in New Hampshire, bringing him samples of the mineral and wanting him to interest himself in working the mine, which was supposed to be on the old farmer's property. Unhappily, the vein of graphite discovered by the New Hampshire man produced only a few hundred pounds. But this was enough to fire the zeal and curiosity of Joseph Dixon and to start him in his line of experiments.

He then arranged with sea captains that were sailing between the Port of Boston and East India to bring back from Ceylon quantities of graphite for his use.

This was the first importation of graphite in America.

In the death of Mr. Dixon in Eighteen Hundred Sixty-nine, the practical management of the business drifted to Mr. John A. Walker, who went into the works as errand boy and janitor, and arose step by step, for power always gravitates to the man who can shoulder it.

Walker was the moving spirit in the Dixon enterprise until the day of his death, in Nineteen Hundred Seven. He served the Dixon Company for more than forty years. He was a man of marked personality, heir, through love and devotion, to a good deal of the genius of the dead chief.

In Eighteen Hundred Eighty-nine the Dixon Company was practically reorganized. Mr. E. F. C. Young was made President of the concern; Mr. John A. Walker was made Vice President, Treasurer and General Manager, and George E. Long, Secretary.

John A. Walker ended his work in this world in Nineteen Hundred Seven, and President Young passed away in Nineteen Hundred Eight, and was succeeded by his son-in-law, Mr. George T. Smith, who had had an experience of thirty-five years with the Pennsylvania Railroad Company and who was Vice President of the First National Bank of Jersey City, of which Mr. Young was President. Mr. Wm. H. Corbin, a well known lawyer of Jersey City, was made Vice President and General Counsel; Mr. George E. Long, Treasurer; Mr. Harry Dailey, Secretary; and Mr. J. H. Schermerhorn, Assistant Treasurer and Secretary.

In all the history of this great concern, it was never so prosperous as it is now. Free competition has made the Dixon Crucible Company supreme in the manufacture and distribution of graphite products.

In the way of graphite lubricants, twenty-seven different forms are supplied. Graphite, for the use of electrical workers and manufacturers of electrical supplies, has become a very important department of the business.

Graphite is used in electrotyping and for polishing and dyeing, and for paint and metal structure work; and the demand for crucibles still continues as never before.

Chemists are a superstitious lot, and after they get a thing that serves their purpose they are not to be diverted by the offer of something else "just as good."

In melting gold and silver, men cannot afford to take chances on an imperfect implement.

Dixon Crucibles mean the standard of excellence, and anything upon which the name of Dixon is placed is a guarantee of its purity, strength and its effectiveness.

The intricate machinery used in the manufacture of crucibles, stove polish and other graphite products, sprang almost

entirely from the restless brain of Joseph Dixon. Most of these inventions are unpatented, and they are made in the Dixon machine shops for the exclusive use of the Dixon Crucible Company. If anyone else can make a machine "just as good," he is welcome to go ahead, and the strange part is that he never does it.

The Dixon Company are also very largely indebted to their own mechanics for many of the improvements that have been made in their intricate machinery. These men are ever on the watch to improve and simplify the wonderful labor-saving machinery. They are satisfied, and satisfied men are always endeavoring to help their employers. They are appreciated and encouraged.

The Dixon Company are the largest consumers of graphite in the world. They are also the largest consumers of cedar. Anywhere in the world where cedar trees are grown lush and lusty, the Dixon folks will buy the property if it is for sale. The Dixon folks own between seventy and eighty thousand acres of cedar forest in Florida.

They have cedar trees enough in sight to answer their requirements for a hundred years to come.

Forestry forms a big interest with the Dixons. The subject of raising cedar tress has been considered by them from every possible standpoint, and the men they hire to look after their trees are experts in their especial line.

On account of the great use of the especially constructed machinery, the Dixons do not employ as many helpers as one might suppose. Between fifteen hundred and two thousand people do their work.

One of the needs for which a machine has never been invented is the picking up of twelve lead pencils out of a mass at one motion. In the Dixon works the visitors are surprised and pleased to see scores of bright, healthy, active girls, who reach a hand into a box without looking, and pick out twelve pencils with one grab, ninety-nine times out of a hundred.

This degree of efficiency shows how we not only think with our heads, but with our hands. Most of us are uneducated in a digital way. Joseph Dixon himself used to boast that he could do this thing, and he it was who taught the girls how to think with their fingers. Outside of Joseph Dixon, this exquisite digital skill seems to be a feminine attribute, for no man around the Dixon works can approach the women in efficiency.

Naturally, the Dixons are very proud of their helpers, some of whom have been with them upwards of fifty years and are still at it.

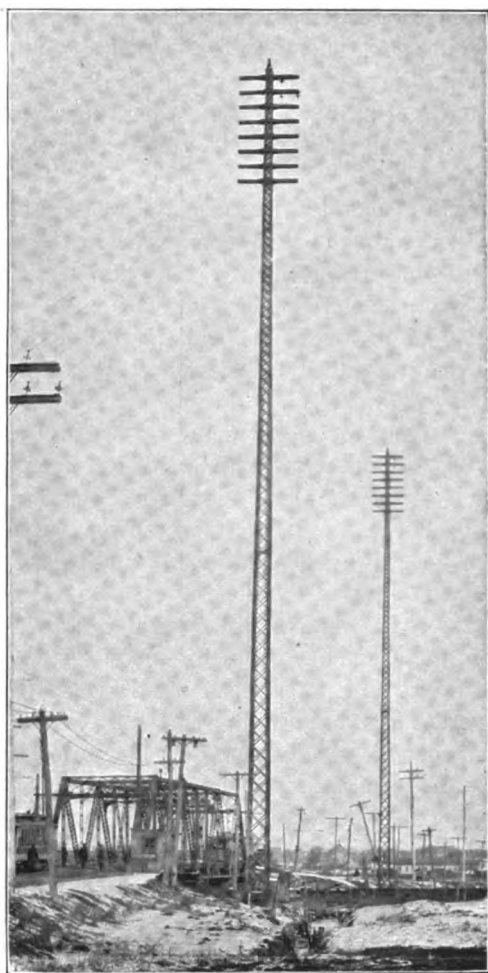
The Dixon business stands as a great solid entity, ably organized, meeting the needs of millions of people.

As the commercial interests of America grow more and more, so will Dixon products be in demand. The immense strides of the Dixon Crucible Company within the past few years give only a guess as to what the work will eventually develop into.

Surely Joseph Dixon, with all his vividness of imagination, never anticipated the extent to which this business that he founded has grown.

So far does a little candle throw its beams!

LOVE makes the world go round, and Dixon's Flake Graphite does as much for the wheels.



STEEL POLES FOR RIVER CROSSING

The steel poles shown in the illustration form part of the important transmission line of the Public Service Electric Company between Perth Amboy and Elizabeth, N. J., and are used to carry thirty power wires over Woodbridge Creek, at a height sufficient to allow the passage of sailing vessels.

The poles or masts are of the latticed steel type, 151 feet high, and are located within a mile of the sound. They were given a shop coat of Dixon's Silica-Graphite Paint, Dark Red, followed by a field coat of Dixon's Olive Green.

The work was designed and constructed under the supervision of Mr. R. D. Coombs, consulting engineer of R. D. Coombs & Company, engineers and contractors, New York City.

THE OPERATOR'S ASSIGNMENT WHILE WAITING FOR COPY

The operators of type casting machines have evidently developed a language as picturesque as it is professional and quite distinct from the parlance of the ordinary hand compositor. The *Inland Printer* reports the following fictitious (we hope) account of the demise of a certain operator who became unwisely interested in aeronautics:

"Pawl Barr, who has always been considered a hot slug in the aviation business, gave an exhibition today. The dump was full of people who had come out to see him operate his machine.

The day was as bright as if it had been polished with graphite. The machinist, having loaded the magazine with gasoline

and pronounced everything O. K., the aviator slid into his elevator and threw on the clutch. The smoke ejected by the engine made the air look as though it had been sliced from the rear end of a composing room.

His elevator ascended rapidly until about as high as the price of repairs. After the first advance, however, his machine proceeded to cast. The aviator had not expected this plunger, but with the aid of his parachute came down as slow as a crooked mat on a cold morning. The distribution of the machine was all over a forty acre field. The aviator was luckier and lit on a matrix with only a bent shoulder and a battered ear, although as dirty as a proof. The crowd was as badly scared as a green comp. after a squirt, but stuck to its seats like metal on a spaceband and acted quite cam.

Pawl soon assembled himself and, saying it miter been worse, called for his second elevator. With a "what-the-hell-box-do I-care" start he was off his feet. After making three-quarters of a revolution around the field his machine began acting like a No. 1 when the machinist puts on a clean shirt, and soon made a recast.

N. B.—Pawl Barr will be buried in Gal. 13 of the dump reserved for Unprofane Comps. It is alleged that he will be quite lonely for a number of years. Obituary unnecessary. Ghost walks every Saturday.

—————SLUG 11."

HANSHUE WRITES HIS APPROVAL



Harris M. Hanshue, whose initials are taken by many as indicative of the position he holds among automobile racers, writes the following letter in appreciation of Dixon's Automobile Lubricants and his photograph, which we believe was taken at the same time, certainly corroborates the spirit of his letter.

LOS ANGELES, Cal., Oct. 23, 1911.

*Joseph Dixon Crucible Company,
Jersey City, N. J.*

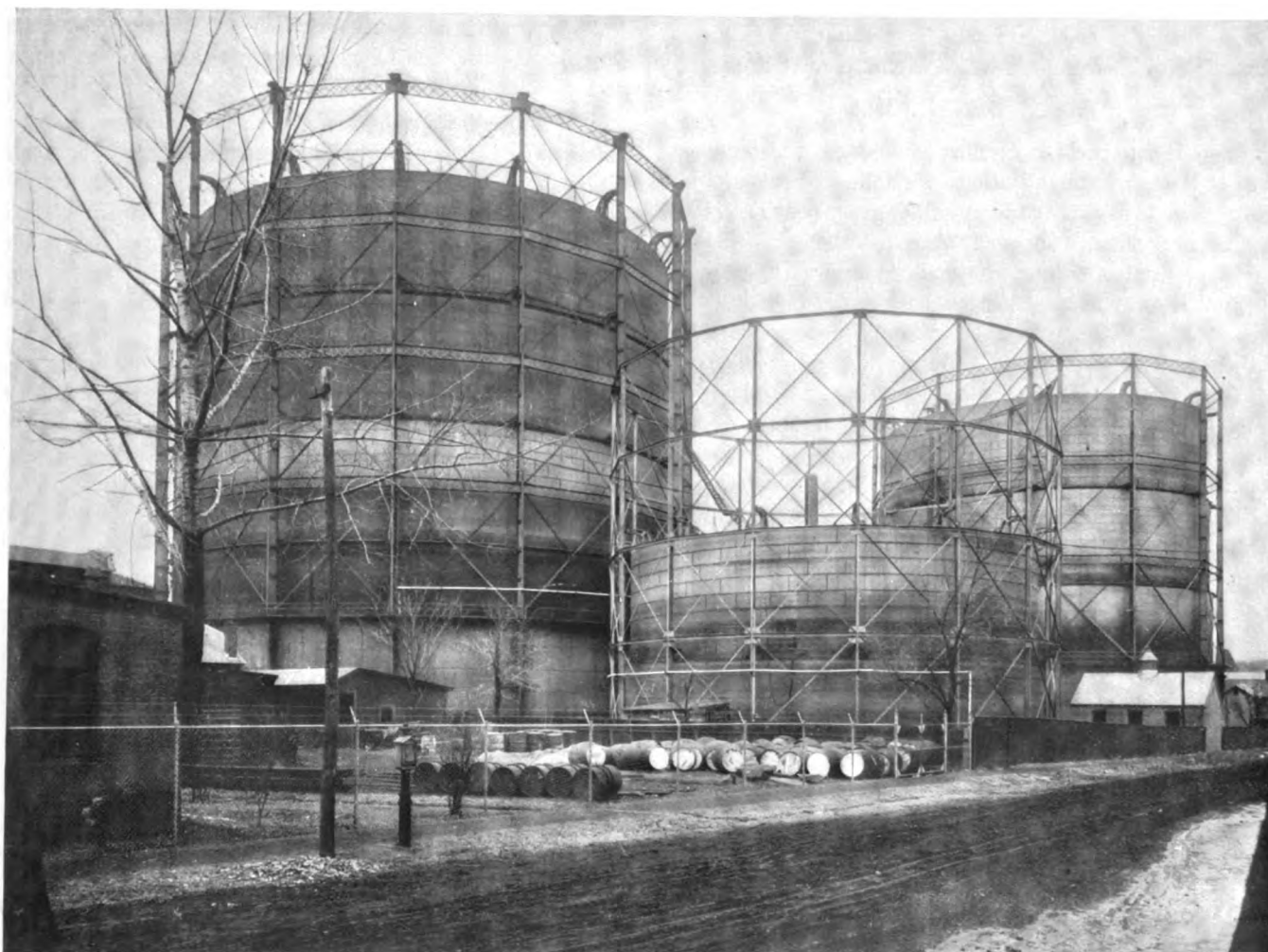
GENTLEMEN:—In the recent Santa Monica Road Races and subsequent races at Playa del Rey, I drove the Mercer "30" and Reo "30" in the different class of races. With the Mercer car, we obtained an average speed of 78 miles per hour at Santa Monica and 67-1/10 miles per hour with the Reo.

These cars were both lubricated throughout with Dixon's Graphite Automobile Lubricants, using your No. 677 in the transmission and differential, No. 676 in the universal joints, and Graphitoleo in the wheel spindles. In the several hundred miles traveled by each one of these cars, we had no occasion to change or add to the grease. The lubrication was simply perfect. I can hardly express myself as to the satisfaction obtained from the use of your goods. It is best said that it is my intention to continue to use and recommend them.

If you wish further information, it will be cheerfully furnished.

Yours very truly,

Harris M. Hanshue



SPRINGFIELD GAS HOLDERS

The accompanying illustration gives a good view of the Springfield Gas Light Company's holders, Springfield, Mass.

Those familiar with gas plants, fully appreciate the severe conditions to which gas holders are subjected. There is probably no section of the country where conditions are more exacting for properly protecting metal work against the elements than those encountered in New England. For this reason a tough, elastic coating is required, a coating that will not only yield to the expansion and contraction of the metal without cracking, but prove an efficient barrier against the hot sun and wind driven dust of summer as well as the severe sleet storms of winter.

In meeting the requirements for such strenuous service, practical tests on millions of square feet of surface have emphatically demonstrated that the well known product of Dixon's paint factory has come nearest yet in reaching the ideal.

The silica-graphite pigment, unaffected by heat and gases, is practically indestructible and combined with the pure, boiled linseed oil vehicle has demonstrated its great value as a metal preservative for nearly half a century.

Characteristic of the competent management of the Springfield Gas Light Company, careful attention is given to properly following up all maintenance work. For this reason, after special investigation regarding the merits of protective coatings, Dixon's Silica-Graphite Paint was selected and used for the big holders.

A recent inspection of the broad expanse of metal which has been painted several years, showed it to be in excellent condition. With remarkable tenacity the paint clings to the huge holders, which are an important factor of a wonderful system, upon the proper management of which depends the comfort and safety of a large community.

Aside from the excellent wearing qualities of Dixon's Silica-Graphite Paint and its good spreading and thorough covering powers, another advantage is secured through its use. Gas holders are necessarily large and the dark rich shades of this paint produce a particularly desirable effect that could not be obtained with lighter colors.

THE HUMAN SIDE OF GARDENING

Corn has ears.
 Potatoes have eyes.
 Squashes have necks.
 Cucumbers have warts.
 Cabbages have heads.
 Celery has a heart.
 Wheat has a beard.
 Grapes have skin.—*Life*.

OF ALL sad words of tongue or pen, the saddest are these: "I'm stung again." Next time get Dixon's Flake Graphite.



WASTE OF PENCILS

We note in an article concerning lead pencils, which appears in one of the current publications, the following remark: "I believe it safe to say that at least half of every pencil is thrown away because it has poor lead, or is too short."

Certain it is that no one who makes use of a Dixon pencil will throw it away because it has a poor lead. Poor leads are strangers to the Dixon pencils. Dixon's pencils are noted for their tough, smooth and enduring leads, but of course leads in all pencils, even in the best, wear away. If, however, one follows the practice of many wise merchants who furnish pencils to their employees, and many wise people who are obliged to buy their own pencils, use will be made of Dixon's Pencil Lengthener, illustration of which is shown herewith. With the Dixon Pencil Lengthener the pencil can be used up to a stub of not over one inch in length.

The lengthener is also a point protector for the pencil.

These lengtheners can usually be found at all stationers.

PICK-UPS FROM THE TRADE PAPERS

Under the subject of "Overhauling the Car" by Ralph C. Puckett, in the March issue of *Gas Review*, the following appears, in part.

"A little graphite is a very good addition to any grease; it is quieting to the gears and acts as a very good lubricant as well.

"Look over all the foot and hand brake levers, pins, etc. It is a good plan to take all the pins out and give them a coating of graphite and grease, then replace them; this graphite will last a good share of the season and will help make the brakes surer in acting."

We presume the writer has in mind the use of the right kind of graphite, that is, a grade suitably adapted for lubrication and to meet this requirement, the Dixon Company are offering their Motor Graphite.

To always insure the right application of graphite and to save the trouble of mixing graphite greases, the Dixon Company prepare a full line of automobile graphite greases, for various parts of the automobile.

An engineer inquires in the *Thresherman's Review*, if it is good practice to remove the steam chest cover and put in several tablespoons full of lubricating graphite mixed with valve oil?

The *Review* replies that such practice is good as long as the mixture lasts, but that it does not last long enough to be worth while. The *Review* recommends the mixing of the graphite with the regular cylinder oil, and the feeding of it regularly with the lubricator or pump, then excellent results will be obtained.

The *Woodworker* recommends that all engineers, machinists and others who have anything to do with bolts and nuts should make use of a little graphite and oil, or graphite and grease when putting nuts and bolts together. The use of graphite, even dry graphite on the thread of bolts will positively prevent nuts from becoming rusted on the bolts.

The use of flake graphite will prevent not only rust, but also will save much labor and possible breakage of tools when it becomes necessary to loosen the nuts.

In the February issue of *Steam Shovel and Dredge*, the following inquiry and answer appear, in part.

Q.—Outline briefly the successive steps and precautions to be observed before a newly placed engine is ready for steam.

A.—Before connecting to engine permanently a new steam pipe should be thoroughly blown out with steam of good pressure. The steam chamber, valve ports, valves, piston, etc., should be carefully cleaned of all foreign matter and liberally supplied with good cylinder oil; also a generous application of flake graphite.

We would add that it has been found an equally as good practice to continue the application of flake graphite to the engine, then it will always run smoothly and its life will be greatly prolonged.

IN THE March 14th issue of *The Automobile*, Mr. J. W. Brown, Oxford, N. C., makes inquiry as follows:

Q.—Please tell me, through the columns of *The Automobile* the uses of flake graphite.

A.—Flake graphite has been recommended as an effective lubricant for any parts which are exposed to dust, such as chains, springs, wheel rims, etc. When mixed with either viscous or liquid oils it will increase their lubricating qualities. It has been used extensively in oils, cup greases and transmission lubricants.

In this connection, we would advise that the Joseph Dixon Crucible Company prepare a full line of graphite lubricants especially adapted for automobile use and will be pleased to send copies of our literature, which deals fully with this matter, to anyone interested.

FOR THIS relief much thanks, so would the engine speak on which Dixon's Flake Graphite is applied.


DIXON'S
AMERICAN GRAPHITE
PENCILS

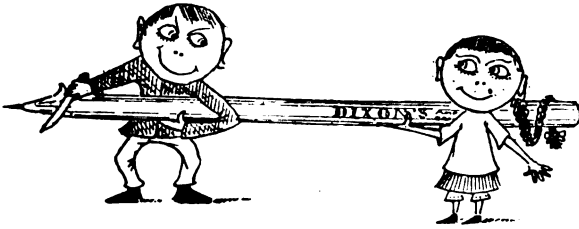
EVERY Dixon package contains full measure of conscience.

Dixon pencils are made so good that the first sale makes the buyer a steady customer. That is *Dixon history*—eighty-four years old.

Send for our booklet—*Dixon's Guide for Pencil Users*. Tells all about the right pencils for all uses.

JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.





THE DIXON BROWNIES MAKE A MOVE

The following letter refers to the Dixon Brownies who have disported themselves in the window of Mr. C. P. Harlow's Philadelphia Stationery Store.

Joseph Dixon Crucible Company.

DEAR SIRs:—I received your communication relative to the kids who have been engaged at my store for sometime past. Would say that they are quite well, have been working every day except Sundays, about fourteen hours a day, which is a little longer than the laws of the state allow so young children to work, but I do not see that they have been harmed.

They sometimes think it good for young people to have a change of climate and perhaps it will do these kids good to have a change, and, also, they may be able elsewhere to earn a larger salary. At any rate, they are willing to give it a trial, so have been gotten ready for the journey, and like most children are waiting impatiently for the carriage to call and take them away. If your coachman drives around he will find the kids in good spirits ready to start.

Hoping for their future good health, and should they wish to return at any time, assuring you and them that we will cheerfully receive them and give them employment, I am,

Very truly yours,

(Signed) C. P. HARLOW.

HE READ "GRAPHITE" IN 1898

MONONAGH, W. Va., March 13, 1912.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—That old "stand-by"—GRAPHITE—for March just to hand. I have the honor, I guess, of never missing a copy since it was born. It showed good sense when real young and nursing, well each copy proves itself a notch better than the one of the past month, it is like a young man going to school; it is continually on the "improve" and I hope the day will never come when it "graduates," for then it will begin another life and lose track of us old has beens.

"Adventures of an Anglo-Saxon," in my estimation would be a good piece of business in pamphlet form to distribute to the school kids as well as to every user of a pencil. This one sketch has brought the Dixon Lead Pencil to the front better than any one article that I have ever read in GRAPHITE or any other publication. It shows the mind the possibilities of a pencil and gets a fellow to studying and the first thing he knows he can swear that the Dixon pencil is in a class all by its lonesome self.

My relations with the Dixon Company dates back to 1894, as near as I can pull the cobwebs from myeyes. I introduced graphite every place I went and have the first complaint to

hear yet, I know it used to be graphite this and graphite that, now it is, use a small quantity of Dixon's here and there and your troubles are ended.

Your advertising has a "pulling" way about it that does not smack of—you have to use it—or, we know more about your business than you do yourself, like numerous "ads" nowadays boast of. You put me in the mind of a farmer. I have apples on my trees that I think are as good as are grown anywhere in the country and if you don't believe it, just try them and see, once tasted always wanted.

You know I have a gas burner patented in both the United States and Canada; do you know of any party up in Canada that I could sell the Canada patent to? I am not as young as I was twenty years ago and as my hearing is nearly gone, I have to get a few \$ \$ \$ \$ now to live on in my old days, I will sell the Canada patent reasonable and cheap (yes, I use Dixon's on the burner).

"Old Friends In A New Guise" on page 2413—do you sell them to any old "geezer" that will remit the price or do you sell them only through your established houses. I guess I have never been Dixonless since I got my first pencil. I have never signed my name with ink to anything at all since I got possession of Dixon's Eterno No. 2060. Checks and everything fall heir to that pencil and when I leave this world she goes with me, for I don't believe the lead is "burnable."

Very respectfully yours,

H. C. FABER.

WOES OF THE TRAVELING MAN.

"Where are you going from here?"

How tired I get of that phrase!

Out of the year it greets my ear

Three hundred and sixty-five days.

As I leave home after a rest,

The conductor on the train

Takes a grip on my mileage strip

And fires it at me again;

The hotel man gets sociable

As I pay for his high-priced cheer,

And drops my bill in his yawning till

With a "Where are you going from here?"

The barber stands with a tip in his hands,

And as I disappear,

"Come in again," he yells, and then,

"Say, where are you going from here?"

Till at last I dreamed, and to me it seemed

That my time had come to die,

And with the angels I took my flight

To the pearly gates on high.

St. Peter stood in a thoughtful mind

At the foot of the golden stairs,

But raised his eyes as we drew nigh,

And asked, with a doubtful air—

"Your papers, please. What ails your knees?"

Then grinning from ear to ear—

"O, you are one of those traveling men!

Well, where are you going from here?"

—*Indianapolis News.*



Dixon's Graphite Facings

Dixon's Graphite Facings are recognized as the standard of the world.

Dixon's Graphite Facing No. 2442 is one of the best all-around facings skill and brains can produce.

Nothing before quite like it. Use it for iron and brass. Does not follow the sand after the slicker. If you are desirous of improving your foundry practice, try a barrel of it. There's a

DIXON FACING

for each particular kind of molding, and no matter how "good" or how "cheap" your work, you will find a Dixon Facing just a little bit better than any other for your purpose.

It has been our constant study for years to produce just what our customers need. Write for prices and booklet No. 190-S.

JOSEPH DIXON CRUCIBLE CO.

Established in 1827

JERSEY CITY, N. J.

GRAPHITE

VOL. XIV.

JUNE, 1912.

No. 6.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

AIR COMPRESSOR LUBRICATION

In spite of the care exercised in designing and operating compressors, we still read of disastrous explosions, usually traceable to the presence of inflammable gas of the air lines. Such a condition is nearly always due to the improper use of lubricating oils.

The lubrication of air compressors and pneumatic tools is a feature deserving careful attention. A common fault is to use too much oil and oil that has too low a flash point. An air compressor does not require as much oil as a steam cylinder; in fact it were far better to limit the use of oil to a minimum. Oil tends to cause the valves to stick and thereby necessitates frequent cleaning. If kerosene is used to remove the deposit the

valves must be taken out, although engineers have been known to introduce kerosene through the air inlet valves for this purpose. Kerosene will clean the valves, but it is also equally effective in producing an explosion.

The sanest method is to lubricate air compressor cylinders with soapy water and flake graphite. Such a mixture provides economical, efficient and safe lubrication and keeps valves clean. A little oil should be introduced when shutting down the compressor to prevent any tendency of the soap suds to cause rusting. By this method all dangers attending the use of oil are overcome.

Flake graphite has a strong tendency to attach itself to metal surfaces and, when thoroughly worked into the inequalities of surfaces, imparts a superficial glaze or veneering of great smoothness, high polish and endurance that prevents actual metal-to-metal contact, and makes it possible for relatively small quantities of fluid lubricants to provide a safe and sufficient film or lubricating layer.

Flake graphite is an inert mineral; its normal smoothness is quite unaffected by any degree of heat attainable in the air compressor cylinder. Under no conditions can it be volatilized, carbonized or baked into a hard or gummy mass to interfere with the free action of the valves. On the contrary, its presence upon working surfaces is a guarantee of smooth operation.

One of the best booklets on the subject is "Air Compressor Lubrication," published by the Joseph Dixon Crucible Compa-

ny. Everyone in any way interested in the operation of compressors should read this booklet, for it contains information worth having. Free copies may be obtained upon request.

FRAUDULENT ADVERTISING

The Advertising Men's League of New York is making what they consider a righteous fight against fraudulent advertisers. They have appointed a Vigilance Committee, whose specialty it is to look after all fraudulent advertisers. Mr. Alfred W. McCann of Francis H. Leggett & Company, 100 Hudson Street, New York, is the chairman of that committee, and any one who sees an advertisement that looks as though it was dishonest, should advise Mr. McCann at once, with copy if possible, of the advertisement. No responsibility is taken by the sender, but Mr. McCann is given something to investigate. If it turns out to be straightforward no harm is done; if it is found to be fraudulent, the matter is turned over to the District Attorney.

As a sample of what constitutes fraudulent advertising, take the matter of fraudulent shoe advertising. Mr. Taylor, the editor of the *Boot and Shoe Recorder*, says that sample shoes are made only in one size for men and one size for women; notwithstanding this fact, shoe advertisers again and again advertise that they have a complete line of sizes in sample shoes to be sold at absolutely low prices. Mr. Taylor estimates that such fraudulent advertising results in the sale of over \$20,000,000 to \$40,000,000 worth of shoes every year at prices which are in effect a swindle on the public. For example, shoes will be advertised at \$2.69 as being regular \$6.00 shoes, when as a matter of fact the shoe is a cheap product wholesaling at \$1.60 to \$1.75, in fact, which any reputable dealer will sell, and is selling, for \$2.50 or even less. The same may be said of fraudulent piano advertising, clothing advertising and many other lines of goods.

ARE YOU EARNING ALL YOU SPEND?

"Every dollar that is spent some one must earn. Dollars do not breed in captivity and some one must earn them. The workers of the world earn every year all the rents and dividends and profits of that year. If work stopped, rents and profits would stop. Mere capital can produce nothing by itself."

—A Thought from *Life*.

Now and forever, one and inseparable, Dixon's Flake Graphite and Good Lubrication.



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

President—GEORGE T. SMITH
Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
Ass't Treas. & Ass't Sec'y—J. H. SCHERMERHORN

DIRECTORS:

GEORGE T. SMITH	WILLIAM H. CORBIN
GEORGE E. LONG	EDWARD L. YOUNG
WILLIAM MURRAY	HARRY DAILEY
WILLIAM G. BUMSTED	

OFFICES AND SALESROOMS:

NEW YORK SALESROOM, 68 Reade Street.
PHILADELPHIA SALESROOM, 1020 Arch Street.
SAN FRANCISCO SALESROOM, 155 Second Street.
CHICAGO OFFICE, 1324 Monadnock Block.
BOSTON OFFICE, 648 John Hancock Building.
PITTSBURG OFFICE, Wabash Terminal Building.
ST. LOUIS OFFICE, 501 Victoria Building.
WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
BALTIMORE OFFICE, 1005 Union Trust Building.
BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS,
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

A BOOM FOR ONE CENT LETTER POSTAGE

Nearly nine billion pieces of first class matter were carried by the post office department for the fiscal year ending June 30, 1911.

Of the total, over seven billion pieces were letters and nearly two billion pieces were post cards.

One of the interesting deductions is the fact that over eighteen million dollars was collected on post cards, the weight of which was a little over ten million pounds only. This amount was just over double the total revenue received from 951,000,000 pounds of second class mail matter produced. This latter was ninety-five times as much in weight and furnished less than \$9,000,000.

WATCH THE LUBRICATION

Watch the lubrication, says *Motoring*, as perhaps there is no one thing which is the primary cause of more expense in maintenance than the one thing which is most easily avoided, and that is insufficient or improper lubrication. It is not possible to go into detail as to just what parts require lubrication, as no two makes of cars are alike. The user should impress it upon his mind that wherever one part moves upon or comes in contact with another part, friction is created. Friction means wear and the wear will be of the metal itself unless foresight has provided proper lubrication. Oil is cheaper than metal. The use of too much is better than too little, but just enough is best.

Choose the oil most suitable for your motor. The best oil is none too good and remember that far better results can be gotten from your oil if the bearing surfaces are in proper condition.

It is especially important to remember that no surface is so carefully machined that microscopical irregularities do not exist. No substance known is so adapted to build up these irregularities as the thin, tough, smooth flakes of Dixon's Ticonderoga Graphite. Surfaces so built up are smoother than it is possible to get by any machine or hand work. Skilled engineers and machinists throughout the world know from experience extending over a quarter of a century, that no amorphous graphite and no form of graphite is equal to the thin flakes of Dixon's Ticonderoga Flake Graphite. Advertising may sell, but it is only experience that can tell the proper graphite to use for the best results. Furthermore, it is common sense that a thin flake graphite must necessarily become fixed to the bearing surfaces where a graphite too finely powdered will readily flow or be squeezed out with the oil.

"Make-ready" is a term used in the printing office. You have noticed in some books or catalogs that the illustrations were poorly printed. Some parts were indistinct and other parts all right. The cost of the "make-ready" is often more than the cost of the press work. Adequate "make-ready" is a tedious and painstaking process; it calls for great skill on the part of the pressman and increases the cost, but it perfects the product and reflects credit on the printer.

The process consists in building up all the weak spots with strips of tissue paper cut to correspond with the outlines of the spots. The pieces of tissue paper are pasted one over the other until the weak spots are built up and the appearance of the proof satisfies the pressman.

All bearing surfaces on machines of every kind have their weak spots, which exist in spite of all the care and skill of the machinist. It is these weak spots that are built up and made smooth by Dixon's Flake Graphite. The thin flakes of graphite build up the inequalities of the bearing surface in the same way as the thin tissue paper builds up the uneven spots back of the printing form.

There is a practical and a scientific reason why only the thin flakes of Dixon's Ticonderoga Graphite will successfully accomplish the desired results. Finely powdered graphite readily passes out with the oil or grease. Flake graphite becomes attached and forms a veneer-like coating of wonderful smoothness and endurance.



HARVEY HERRICK IS CONVINCED

Harvey Herrick, who has recently completed a successful pathfinding trip across the continent for the Hearst newspapers, is better known to automobile fame as a driver of sensational ability. His approval of Dixon's Automobile Lubricants, appearing below, is very pleasing to the Dixon Company and adds especial value to the series of letters that have come from others of national reputation. Mr. Herrick writes:

1130-1132 South Olive Street,

LOS ANGELES, CAL., November 18, 1911.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—As a precautionary measure in my trial trips, I tried out various different makes of greases in the transmission and differential of the National "40." I was to drive in the Los Angeles-Phoenix Road Race. The results were not satisfactory. I did get as far as Yuma and back to San Diego on one particular make, but at the latter place found my transmission dry. I finally decided to use the Dixon Graphite Auto Lubricants throughout the car and did so with gratifying results.

I used No. 677 in the transmission and differential; No. 676 in the universal joints; Graphitoleo in the wheels and your cup grease throughout. Needless to say, I won the race, and one of the first things we did after arriving in Phoenix was to examine the car throughout to see what effect the trip had had upon the car and its contents. The car we found in perfect condition, and upon opening up the transmission and differential, we found the Dixon Greases still intact—both in quantity and quality—the life and body still remaining, and to all appearances they had not run five miles instead of five hundred odd miles over some of the worst roads in the United States.

After this experience, the local branch of the National Motor Car Company have decided to use your goods exclusively. Personally, I give first credit to the car, but I am also

convinced that the high average of speed maintained, the freedom from all kinds of lubricating troubles, was due to the use of Dixon's Graphite Greases.

Yours truly,

Harvey Herrick

QUESTIONS FOR TEACHERS

We are advised that a school superintendent in Kansas has prepared a set of questions for examination of teachers, among which are the following:

"You can frequently see a white horse; why do you never see a white colt?"

"Why does a horse eat grass backward and a cow forward?"

"Why does a hop vine wind one way and a bean vine another?"

"Why does a horse tethered with a rope always unravel it, while a cow twists it into knots?"

"What is the length of a flour barrel?"

"What animals have no upper teeth and why?"

"What is the difference in rising from a recumbent position between a horse and a cow?"

SOME one has said that the difference between men is the difference in energy. No talent or gift will make up for a man what he lacks in energy.

It may with equal truth be said that the difference between two machines of a kind is the difference in lubrication. No matter how fine the workmanship or the amount of skill put on the machine, if it lacks proper lubrication it is a dead one.

The secret of the great success of graphite lubrication lies in the thin flakes of graphite used. These thin flakes build up the rough and uneven parts which are found on all bearings. The graphite forms a veneer-like surface of wonderful smoothness and endurance. On such surfaces the oil and grease can do the best work and can do it most economically.



Salesman's Page



SALESMEN'S CHAT

Dixon's Graphite Facing No. 2442 is finding a ready sale where a good general all around facing is wanted. It does not roll up under the slicker, and castings made from it peel "clean and easy."

A man wrote us the other day asking to have his last order for axle grease duplicated, and said that he would pay the price if it cost twice as much.

Dixon's Automobile Graphite Lubricants are getting well distributed. We note with much pleasure that nearly every automobile catalogue contains a full description of the entire Dixon line.

Dixon's Graphite Brushes are making new friends and the sale is rapidly increasing.

In talking to users of the Dixon Graphite Lubricants, please bear in mind that the principal advantage in using graphite as a lubricant is the building up of a graphite coating on the metal surfaces. There is no advantage in using graphite if it does not get to the metal surfaces. A graphite which does not settle readily in oil will not be effective, and always please bear in mind the tendency of amorphous graphite to ball up into hard lumps.

We had pleasure a while back in telling you about the service of the Dixon Graphite Wood Grease for enclosed gears of electric cars by the Easton & Washington Traction Company, Mr. W. O. Hay, general manager. We understand that these gears are still in service and good for some time yet. In using this grease, it is well to bear in mind that the following is very good practice. Put in just enough grease so that the large gear drags through the grease about three inches and add weekly about a pound of grease to the gears, putting it right in on top of the set.

DIXON'S COLORED CRAYONS

Crayons That Possess Recognized Valuable Qualities Probably Not Found in any Other Make of Crayons

One of the qualities of the Dixon Crayons which is not generally known to the trade, which is known to the teachers of art who use these crayons, is the fact that these colors have a quality which is possessed by few, if by any other make of crayon, that is, the quality of being superimposed, and thus producing all shades and tints of color possible.

One of our salesmen coined a word and called it blenda-bility, which expresses it very nicely. This was forcibly brought to our mind recently on talking with a prominent teacher of art and color. He spoke of it as a discovery of his own, thinking that perhaps we did not know how cleverly these colors could be blended, and gave it to us as a piece of information. Of course, we knew this from the beginning, as the Dixon colors were made to produce this very result. The

crayons are treated in a particular way and manner to produce this very result and that is one of the secrets not only of the durability of these crayons, but the fact that with these colors better results are obtained and a more artistic effect produced, than by any other crayon. The fact that they are tougher and stronger is also well known because they are produced under very heavy pressure, not molded as the so-called wax crayons are, but thoroughly ground and strained through silk sieves to render them absolutely pure and free from the least possible grit.

The Dixon Crayons cost in the beginning more than others, simply because more expensive materials are used in their composition and more time is spent in their preparation, and the schools that consider quality appreciate them, and once they are adopted it is very seldom, if ever, they are displaced.

740 DIXON'S BEST BLUE CRAYON

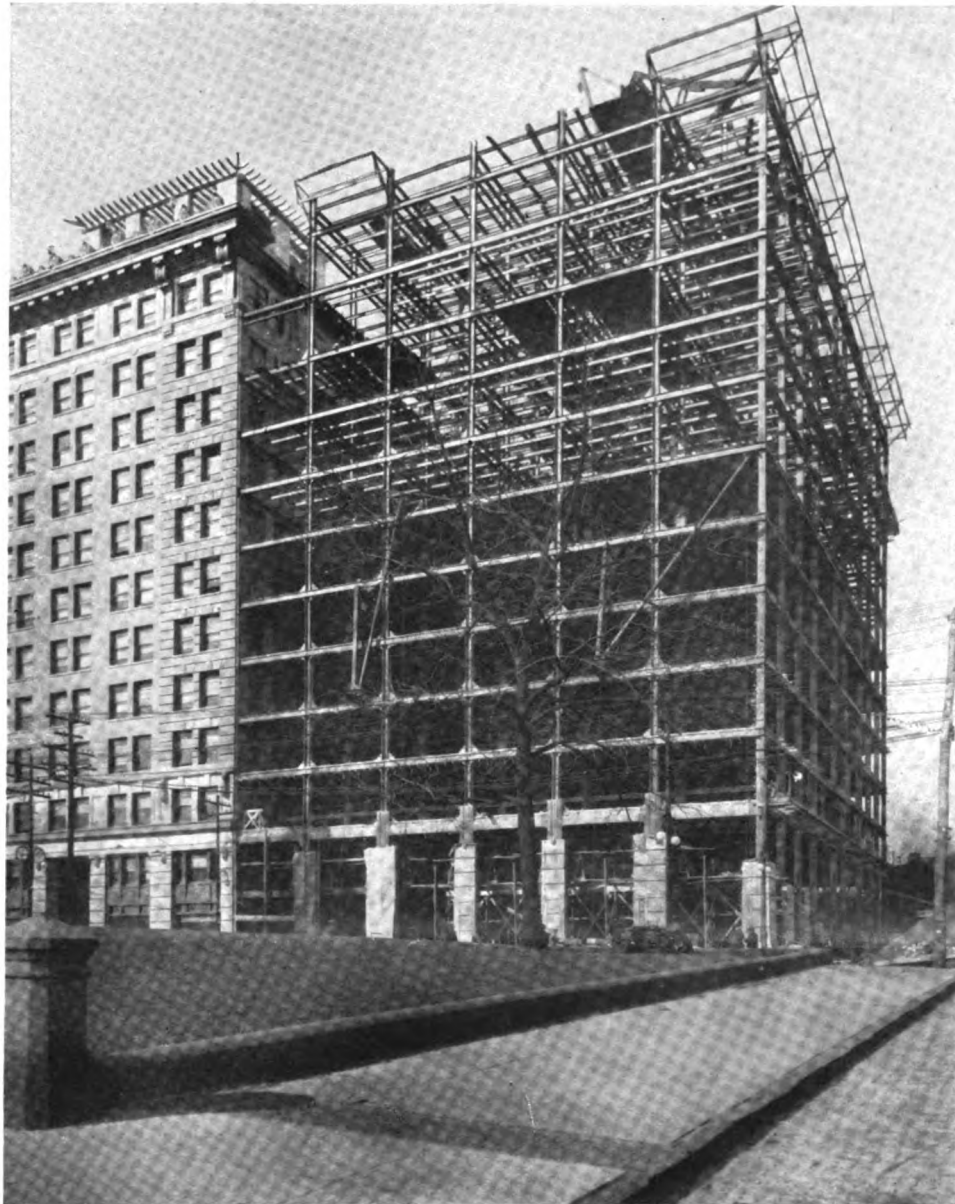
WHY IS SILICA IN DIXON'S SILICA-GRAPHITE PAINT?

One of the reasons is, that we cannot help it if we would. Many people have the idea that silica is added to the graphite. This would make a valuable product, but still it would not be Dixon's Silica-Graphite Paint. The pigment we use is a peculiar one. Anything like it must be prepared in exactly the same manner that we prepare it.

In refining graphite ore as it comes from our mines in Ticonderoga, N. Y., there is a certain product which is too fine to be used for the production of flake graphite for lubricating purposes. In this particular material the small particles of graphite are to a large extent attached to the particles of silica and not separated, as would be the case if silica were added to graphite by hand instead of by nature. Anyone who has had any experience with silica paints, knows how solidly and hard the pigment settles to the bottom of the package and how next to impossible it is to stir this up thoroughly. Now when the graphite particles are attached by nature to the particles of silica this thing does not occur. The settled pigment may be stirred up with the greatest facility. This peculiar feature is a clear indication of the peculiarity of Dixon's Silica-Graphite Pigment.

Pure graphite as a paint pigment has one fault in that, under the brush it spreads out too easily, forming coatings which may be too thin to give good service. The presence of the silica largely prevents this, as it adds a necessary drag. Not enough to be objectionable so far as application is concerned, yet just enough to prevent excessive spreadings. Furthermore, graphite being soft and somewhat easily worn away, it is re-inforced against wear by the presence of the silica.

DIXON's graphite publications sent free upon request.



DU PONT HOTEL, WILMINGTON, DELAWARE

The products of the E. I. Du Pont de Nemours Company are *heard* in all parts of the world. Their uses range from the peaceful employment of aiding in the scientific cultivation of soil to the turbulent task of quelling the ardor of patriotic revolutionists.

The magnificent plant and general offices of the Du Pont Company at Wilmington, Delaware, consist of many buildings with attractive grounds. The building operations of the company have been somewhat extensive, and much of the work has been done by the Manufacturers' Contracting Company, a subsidiary of the Du Pont Company.

Mr. W. H. Fenn is president of the Manufacturers' Contracting Company and the planning and building of many Du Pont structures have been in his entire charge; this concern acting as architects, engineers and general contractors.

Our illustration shows 1700 tons of steel framework protected with Dixon's Silica-Graphite Paint. This incomplete structure is the majestic Du Pont Hotel, a modern concrete twelve story building. The Du Pont Company is now equipped to furnish material for "blow-outs" of a more quiet nature.

In the illustration the completed structure adjoining the framework of the Du Pont Hotel is the Du Pont Office Building, also protected with Dixon's Silica-Graphite Paint. Powder and paint are national preservatives. Our looks, our lives and our property depend upon them. And for our property, Dixon's Silica-Graphite Paint is the greatest of all protectors.

In general appearance the Du Pont Hotel conforms with the Du Pont Office Building and the two structures appear as one.

The fabricators were the Cambria Steel Company; the iron contractors, the Jobson-Gifford Company and the John Cronis Nestopoulos Company, the contracting painters who applied Dixon's Silica-Graphite Paint to the structural steel work.

OUR HOME RUN ADVERTISEMENT

of the Washington A. L. Baseball Grandstand in April GRAPHITE is declared a fluke. The Osborn Engineering Company of Cleveland, O., score an error against us for omitting to touch first, at which sack they engineered. Robber!



**SAN FRANCISCO
SALES FORCE**

**JOSEPH DIXON
CRUCIBLE COMPANY**



THE SAN FRANCISCO DISTRICT SALES FORCE OF THE JOSEPH DIXON CRUCIBLE COMPANY

California possesses a climatic reputation that is the envy of every other state in the Union. Californians modestly attribute some of their good looks to this invigorating climate.

It is not to be wondered at that California is ranked as so rich a state, for people there are not obliged to invest in winter clothing. Women vote in California and yet the state is noted for its peach and other fruit crops. Lemons are scarce.

San Francisco graciously acts as the state's hostess to all visitors, excepting automobile enthusiasts, who insist upon roaming about, especially among the southern coast cities, where racing is rampant. San Francisco is also the headquarters of the largest of the several sales districts of the Joseph Dixon Crucible Company.

Though termed the San Francisco district, this territory comprises the states of Washington, Oregon, California, Idaho, Montana, Wyoming, Utah, Arizona and New Mexico. It also includes the city of El Paso, Texas; the Hawaiian Islands and that part of Canada west of the Rocky Mountains. All this sounds vast, as indeed it is, to the man accustomed to the short distances of the East. To the Westerner, however, a journey seems only a short trip.

Mr. Arthur C. Bowles is no stranger to readers of GRAPHITE. His photograph, together with a phrenological reading from Messrs. Fowler & Wells, appeared in the August 1910 issue of GRAPHITE, shortly after his appointment as manager of the San Francisco Office.

Mr. Bowles came with the Dixon Company in 1902. He was attached to the San Francisco office as a salesman, traveling in Southern California. As his knowledge of the goods of the Dixon Company increased, his territory became larger, year by year. His record was so good that it finally led to Mr. Bowles' appointment as manager. Mr. Bowles is at the top of active young life, scarcely having completed his one score and ten. It may not be out of place to mention that Mr. Bowles is a thirty-second degree Scottish Rite Mason and Shriner.

Mr. Bowles enjoys the confidence and respect of those who are working with him to build a larger Frisco branch. As an instance of the good feeling and loyalty existing at the Frisco office, Manager Bowles was presented with a handsome meerschau "pipe of peace" as a token of esteem and appreciation from "the boys." Just why the gift bore so significant a title has never been quite understood, though possibly the boys discovered that Mr. Bowles is a descendant of King Rufus the Red and determined to take no chances.

The boys, as Manager Bowles sees them, are live, wide-awake and clean cut. Mr. Bowles is proud of his staff of salesmen and an inspection of their photographs, reproduced on the opposite page, may be taken as evidence of his good judgment.

Mr. A. G. Thomson joined the San Francisco sales force about 1900, two or three years before Mr. Bowles. In 1908 Mr. Thomson resigned and in 1910 again became identified with the Dixon Company. Mr. Thomson is well known to the automobile trade of the Pacific Coast where, chiefly due to his efforts, Dixon's Automobile Lubricants have become so well recognized, not only among those who drive for pleasure, but among those who follow the strenuous occupa-

tion of racing. The series of remarkable testimonial letters from drivers of national reputation, which are now appearing in GRAPHITE, resulted from Mr. Thomson's convincing demonstrations of Dixon's Automobile Lubricants.

Mr. D. W. Sawyer has sown the seeds of introduction and smoothed the path of distribution for Dixon's American Graphite Pencils. His work is educational and has largely influenced the demand that moves and the orders that replenish the stationer's stock.

Mr. H. L. Hewson is one of the few who are particularly adapted to meet the wide dissimilarity of human nature. In other words, he's a good "mixer." And it is this essential quality that enables him to handle all of Dixon's Graphite Products and meet with success in the many and varied trades in which they are sold or used. Mr. Hewson, in addition to a wide southern territory, visits the Hawaiian Islands, a trip that Mr. Bowles made each year before his appointment as manager.

Mr. George V. Guyer, the representative of the Dixon Company in Mexico, was born in the state of Missouri, October 12th, 1881. His early life was spent on the Mexico frontier in Texas and New Mexico. He has lived for the past nine years in the city of Mexico. In April 1910, Mr. Guyer became associated with the Joseph Dixon Crucible Company as a representative of the San Francisco Branch. In August of that year Mr. Guyer became the representative for the Dixon Company in Mexico, succeeding Mr. Bowles, who at that time was appointed Manager of the San Francisco Branch. Mr. Guyer speaks, writes and reads Spanish fluently, and has a working knowledge of French. Before coming with the Dixon Company, Mr. Guyer was a newspaper man and his knowledge of literature, music and life has made him a wonderfully well-rounded and well-equipped man, easily able to hold his own as a salesman, writer or raconteur.

The particular efforts of Mr. C. E. Wehn are directed towards educating the school children of the Northwest to the many good qualities of Dixon's American Graphite Pencils, so that as these children grow up it will be natural for them to ask for Dixon's and refuse to accept a substitute.

The home office extends its thanks to the boys of the Golden Gate. Good photographs are almost human and we are proud to introduce to readers of GRAPHITE the sales force of our San Francisco Branch.

NOT ALL IN JERSEY

United States Consul Cole, located in the Yukon Territory, reports that the mosquito is more numerous in the Arctic Zone than in the Tropics, though there is no land too cold or too hot for its habitation and the only place where it is not found is in localities where there is little or no moisture.

There is no country where the mosquitos are so large and so numerous as they are in the Klondike, and it is impossible to destroy them, as they propagate in the heavy moss that grows there, which contains moisture almost equal to swamp lands.

Although it may surprise many of our readers, there are many places in New Jersey where the mosquito is not known, and many other places where she is but little known, as we are told by our scientific friends that it is "she" and not "he" that bites.



A BRAVE STEEPLE-JACK

This is one Instance where it is a Virtue to be "High-Minded"

Mr. W. A. Lewis of Deer Park, N. Y., can be seen in this remarkable photograph, coolly perched on top of the church steeple, his work well done, while he enjoys himself, for a while, "monarch of all he surveys."

The steeple is on the German Lutheran Church, 88th Street and Lexington Avenue, New York City, and as with all Mr. Lewis' "lofty" work, is painted with two coats of Dixon's Silica-Graphite Paint.

Mr. Lewis does not expect to have to paint that steeple again for eight years or more. Dixon's Silica Graphite Paint, while costing a little more, *lasts longer*, and therefore saves in labor and material. Mr. Lewis will, however, be busy painting steeples, smokestacks, etc., elsewhere with one or another of Dixon's Four Colors, as many new users have discovered the superior protective qualities of Dixon's Paint—ONE QUALITY. Will you be one and please us by pleasing yourself with valuable service? We want to save you money.

WE READ in the instruction book sent out by one of the automobile manufacturers that the care of an automobile may be boiled down to two important instructions: "Lubricate" and "Adjust."

It will be readily understood that where one part moves or works upon another there is always more or less friction and

these parts must be oiled more or less frequently, including springs, shackle joints and all bearings throughout the car.

Those who have had much experience with Dixon's Flake Graphite know that when the thin flakes of graphite are introduced, as they may easily be introduced, between the leaves of an automobile spring, the re-concurrence of any squeak is reduced to a minimum, and the probability of a broken spring is eliminated.

The thin flakes of graphite, when introduced into any bearing become attached to the microscopical irregularities of the bearing surface and form a veneer-like coating of wonderful endurance and smoothness, making it possible to economize in oil and to run those parts far longer and far smoother.

NO BOTHER WITH DIXON'S BRUSHES

CLEVELAND, OHIO, April 30, 1912.

Joseph Dixon Crucible Company,

1234 Monadnock Block, Chicago, Ill.

GENTLEMEN:—Three and one half years ago we installed Dixon's Graphite Brushes on one of our motors and since that time have these brushes on all of the motors in our plant and none of these brushes have been changed since they were put on.

We find that these brushes need very little attention, as they do not cut or make the commutator spark, but simply wear to a polish and the only attention required is to blow the dust from the commutator with a bellows.

With other brushes used an electrician was always needed and motors needed constant attention, which caused great delay and inconvenience.

Respectfully yours,

THE W. S. GILKEY PRINTING CO.,
J. M. DOYLE, Superintendent.

ARTIFICIAL GRAPHITE

And other Electric Furnace Products.

We read in *The Christian Science Monitor* of Boston, that the abundant supply of electric energy derived from the falls of Niagara has produced the hottest furnaces in the world. We are told that they melt clay to form the precious metal aluminum, they fuse lime and carbon—the most infusible of all elements—to produce the curious compound calcium carbide. We are further told that they turn out vast quantities of phosphorus and manufacture the invaluable carborundum; also that they produce graphite, "which is almost as hard as the diamond."

We cannot imagine to what use such graphite could consistently be put. Certainly not for lubricating purposes.

IT PAYS to advertise, says *Southern Merchant*.

When a duck lays an egg she just waddles off as if nothing had happened. When a hen lays an egg there's a whale of a noise. The hen advertises. Hence the demand for hens' eggs instead of ducks'.

TO BE or not to be annoyed by friction troubles—Dixon's Flake Graphite is the answer.

TEDDY TETZLAFF—ANNIHILATOR OF SPACE

In the 303 mile free-for-all race at Santa Monica, California, on May 4th, Teddy Tetzlaff again fairly out-distanced Father Time. At the wheel of a 120 H. P. Fiat, Tetzlaff smashed the Santa Monica road race record and attained a marvelous average of 78.50 miles per hour. All that a field of America's best drivers could overtake was his whiff of gasoline.

The personal qualities of an automobile traveler contribute far more towards his success than the material aid upon which he must depend, though the latter is of vital importance. Teddy Tetzlaff's success is in the main a reflection of his own skill, knowledge and daring, though combined with these qualities is a shrewd ability to avoid that which may prove a hindrance and to adopt that which aids materially his success. The car he drives is naturally his first selection and the Fiat is his choice. Scarcely less important does he regard the matter of lubrication and lubricants. Dixon's Graphite Automobile Lubricants meet with his full approval; for them he "would rather pay \$5.00 per pound than use any other grease with a premium attached." And this is said from experience of no small range.

After the Santa Monica race, Teddy Tetzlaff made the following statement:

"I hereby acknowledge that I have tried the leading makes of greases in my transmission and wheels. After experimenting for five days, and my gear box heating up with all other greases, I found by using Dixon's Graphite Greases that they eliminated all heating. Thanking you sincerely for your wonderful goods I am,

Yours,

TEDDY TETZLAFF."

Under date of May 6th, 1912, Teddy Tetzlaff again expressed his own unbounded approval of Dixon's Automobile Lubricants. He wrote as follows:—

*Joseph Dixon Crucible Company,
Jersey City, N. J.*

GENTLEMEN:—During the try-outs for the Santa Monica Road Race in my 120 H. P. Fiat, I tried all other kinds of leading greases, and found that the test to which they were put was too severe. I finally wound up by using Dixon's Graphite and found that it was the only grease that would stand up. I cannot recommend it too highly and attribute part of my success to the use of this grease.

I want to thank you for making such wonderful goods, and making possible the world's record established by this car. My appreciation is such that I can only reiterate my former statement to you, that I would rather pay \$5.00 per pound for Dixon's Graphite than use any other grease with a premium attached.

Yours truly,

Teddy Tetzlaff

The Dixon Company has received many letters of sincere approval from many of the most prominent automobile en-

thusiasts from all over the country. Teddy Tetzlaff's continued use of Dixon's Automobile Lubricants is, however, one of the most pleasing the Dixon Company has ever received.

**A NEW HOME FOR "MOHAWK" GOODS**

In Atchison, Kansas, a new, five story re-inforced concrete building has added to the city's prosperity and provided a home for the Blish, Mize and Silliman Hardware Company.

The Blish, Mize and Silliman Hardware Company are large and well known wholesalers. In order to assume the responsibility for the quality of its products, the company some years ago imported the features of a genuine Mohawk Valley Indian and created a reservation which now extends to wherever the company's products are known. This "Mohawk" brand smokes the pipe of peace with folks who appreciate quality.

The Blish, Mize and Silliman Hardware Company bought Dixon's Graphite Products, grew steadily and prospered. Its present new home, of which an excellent view is shown above, occupies an area of 106½ x 250 feet. The firm is justly proud of its new home and boasts that not a dark corner can be found in the entire building. This construction of course was not to avoid any suspicion of conducting a shady business, but altogether for the benefit of the company's employees who also enjoy the advantages of rest rooms, shower baths, etc. Steel lockers are also provided for employees.

A spacious office occupies a part of the second floor and the whole building is especially adapted to the business. Transit facilities are exceptional—things "step lively" all about the place and even a trash chute rushes waste paper from all floors to the basement, where a special trash stove scarcely allows it to lose momentum.

Though late for the housewarming, our best wishes are extended to the Blish, Mize and Silliman Hardware Company and in particular, may its sales of graphite products grow ever and ever more.

JERSEY CITY, the home of the products of the Joseph Dixon Crucible Company, is celebrating a business and civic festivity known as "Know Your City Week." The illustrations on the back page will indicate the style of the vast rebuilding which is going on in this great manufacturing center, which is only a mile across the North River from New York.

The several tunnels indeed have made Jersey City a part of New York's immense metropolitan development. The steel work of the illustrated buildings is protected with Dixon's Silica-Graphite Paint, the world's best known and most enduring metal protector, which is used on the leading buildings of all the large cities.

GRAPHITE PAINT VS. VENETIAN RED

We have received the following unsolicited testimonial from a gentleman now in the United States Government service, and who recently served as Superintendent of Streets of a large western city. The testimonial speaks for itself:

"While serving as Superintendent of Streets, I purchased, jointly with the township officials, one barrel of Dixon's Silica-Graphite Paint, which was used on two (2) bridges and the metal portion of the water tower. Every man who had anything to do with the work is highly pleased with the result and is a convert to that kind of paint as compared to the much used Venetian Red and oil. The present Mayor of our City is thoroughly convinced of the merits of Dixon's Silica-Graphite Paint."

Joseph Dixon Crucible Company,

Jersey City, N. J.

DEAR SIRs:—We have to advise that, through no fault of our own, we will be unable to pass your expected and promised remittance during the current month, and we wish you to know the exact reasons for this.

Unexpectedly, during the past ten days the local banks discontinued the issuance of U. S. or any other foreign exchange, except in isolated cases where accounts were in U. S. gold. We in common with the majority of local business houses maintain deposits locally only in Mexican currency.

Again, even El Paso banks will not accept Chihuahua checks for the reason that the local banks on which said checks may be drawn cannot and do not remit to cover to said El Paso banks.

Thirdly, local banks are paying even to regular customers on checks only in silver, *i. e.*, Mexican Peso.

Our only possible way for forwarding remittance is this. Get as much money as possible in Mexican bills (which is not an easy matter considering that a large part has been withdrawn from circulation as above stated, and also from the fact that every one is holding on to all bills obtained), and carry same personally to El Paso and make remittance from that point. This is a trip of 200 miles attendant, with some expense. Again, even with many bills (and of course it is doubly true in case of carrying silver) one runs chances of being relieved of said money by the Liberals who now operate the railroad between here and El Paso.

However, the writer is accumulating bills as fast as possible with intention of making this El Paso trip with sole purpose of making remittance to yourselves and others.

Thanking you for consideration under such conditions.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—On the 11th instant we mailed you check to cover payment of your invoices, which invoices were enclosed.

As the train leaving on that evening was held up by bandits and some of the mail destroyed, we will appreciate advice from you as to whether our remittance was received or not.

In case the remittance did not reach you, kindly have duplicates of the invoices sent to us at once, and we will forward duplicate remittance.

Your prompt attention will be highly appreciated by

Yours very truly,

METRIC CONVERSION TABLE

Arranged by C. Hunt, New York

Millimetres × .03937 = inches.
Millimetres ÷ 25.4 = inches.
Centimetres × .3937 = inches.
Centimetres ÷ 2.54 = inches.
Metres × 39.37 = inches. (Act Congress.)
Metres × 3.281 = feet.
Metres × 1.094 = yards.
Kilometres × .621 = miles.
Kilometres ÷ 1.6093 = miles.
Kilometres × 3280.8693 = feet.
Square Millimetres × .00155 = square inches.
Square Millimetres ÷ 645.1 = square inches.
Square Centimetres × .155 = square inches.
Square Centimetres ÷ 6.451 = square inches.
Square Metres × 10.764 = square feet.
Square Kilometres × 247.1 = acres.
Hectare × 2.471 = acres.
Cubic Centimetres ÷ 16.383 = cubic inches.
Cubic Centimetres ÷ 3.69 = fluid drams (U. S. P.)
Cubic Centimetres ÷ 29.57 = fluid ounces (U. S. P.)
Cubic Metres × 35.315 = cubic feet.
Cubic Metres × 1.308 = cubic yards.
Cubic Metres × 264.2 = gallons (231 cubic inches.)
Litres × 61.022 = cubic inches (Act Congress.)
Litres × 33.84 = fluid ounces (U. S. PHAR.)
Litres × .2642 = gallons (231 cubic inches.)
Litres ÷ 3.78 = gallons (231 cubic inches.)
Litres ÷ 28.316 = cubic feet.
Hectolitres × 3.531 = cubic feet.
Hectolitres × 2.84 = bushels (2150.42 cubic inches.)
Hectolitres × .131 = cubic yards.
Hectolitres ÷ 26.42 = gallons (231 cubic inches.)
Grammes × 15.432 = grains. (Act Congress.)
Grammes ÷ 981. = dynes.
Grammes (water) ÷ 29.57 = fluid ounces.
Grammes ÷ 28.35 = ounces avoirdupois.
Grammes per cubic cent. ÷ 27.7 = pounds per cubic inch.
Joule × .7373 = foot pounds.
Kilo-grammes × 2.2046 = pounds.
Kilo-grammes × 35.3 = ounces avoirdupois.
Kilo-grammes ÷ 907.2 = tons (2,000 pounds.)
Kilo-grammes per square cent. × 14.223 = pounds per square inch.
Kilo-gram-metres × 7.233 = foot pounds.
Kilo-grammes per Metre × .672 = pounds per foot.
Kilo-grammes per Cubic Metre × .062 = pounds per cubic foot.
Tonneau × 1.1023 = tons (2,000 pounds.)
Kilo-Watts × 1.34 = Horse Power.
Watts ÷ 746. = Horse Power.
Watts × .7373 = foot pounds per second.
Calorie × 3.968 = B. T. U.
Cheval vapeur ÷ .9863 = Horse Power.
(Centigrade × 1.8) + 32 = degree Fahrenheit.
Franc × .193 = Dollars.
Gravity Paris = 980.94 centimetres per second.

DIXON'S graphite publications sent free upon request.

A FEW LEAVES FROM THE DIARY OF A STOMACH

10 a. m. Oh, dear, another hot day. Wonder if I'll be abused as I was yesterday. If I am, I'm going to strike. Just disposed of a half-chewed breakfast. We ran for the train, which meant that I was so jiggled about and so tired that it took me twice as long to do my work. Hope she gives me an hour or two of complete rest before anything comes my way.

10.30 a. m. Two glasses of ice water have just arrived. It will take all the energy I can pump up in the next hour to warm me up to normal again.

10.50 a. m. Half-chewed breakfast didn't satisfy her and she has bought some peanuts and started eating them.

12 m. Peanuts have dribbled along steadily ever since last entry. Think she has finished them, though.

12.30. Decided she wasn't very hungry, and instead of a good old solid dinner sent me down a cold egg nogg, heavy with chocolate. Could have managed it all right if it hadn't been so cold, but that makes it terribly hard to deal with.

1.10 p. m. More ice water.

1.40 p. m. Was mistaken about the peanuts. She found another handful in the bottom of the bag and now I have them to tend to.

2.05 p. m. More ice water.

3.10 p. m. She has been lifting some heavy books, and, as usual, used my muscles instead of her arm muscles, as she should have done. Tired me more than digesting a six course dinner.

3.20 p. m. Some one has bought us a box of caramels and she has started on that.

4.30. Have received something like half a pound of caramels since last entry. She just said, "Oh, dear, I don't feel a bit well. I know the milk in that egg nogg must have been sour."

4.50 p. m. We were invited out to have a soda before going home. Had a lemon phosphate and then ran for the train.

6.30 p. m. We played a set of tennis before dinner and here I am all tired out and a dinner to handle.

7.00 p. m. Fried potatoes, green corn, veal and blueberries. What do you know about that!!!

7.45. We are going down town for a chocolate walnut college ice!!!!

8.20. Got home and found someone had made lemonade. She drank two glasses. That on top of the college ice settles it. I strike.

8.30. Have sent back the college ice and lemonade.

8.40. Returned the blueberries.

8.50. And the veal.

9.10 p. m. She has sent for the doctor. Says that college ice must have something the matter with it. Her mother says it is probably the weak stomach she inherited from her father.

9.30 p. m. Doctor says its just a little upset, due to the hot weather. Good night!!!!—RUTH CAMERON.

FRUITLESS STRUGGLING

"I understand that after waiting twenty years, she married a struggling young man?"

"Yes, poor chap. He struggled the best he knew how, but she landed him."—*Brooklyn Life*.

AN OLD-TIME DIXON PENCIL

We have received from the Boston Branch of the Dixon Company, stub of a Dixon American Graphite Pencil which has been used by Mr. E. V. Emmons of Framingham, Mass. "off and on for thirty years." As the "stub" of the pencil is nearly three inches in length, we imagine that the use of the pencil was mostly "off."

Nevertheless it is interesting to know that a Dixon Pencil has been treasured to the extent of keeping it such a long time. Mr. Emmons would not have parted with the pencil except that he thought that the manufacturer would take pride in seeing it and in knowing what degree of satisfaction and use the owner had given it.

THE PARTS OF SPEECH

Three little words you often see

Are articles—"a," "an" and "the."

A noun's the name of anything,

As "house" or "garden," "hoop" or "swing."

Instead of nouns the pronouns stand—

"Her" head, "your" face, "his" arm, "my" hand.

Adjectives tell the kind of noun,

As "great," "small," "pretty," "white" or brown."

A preposition stands before

A noun, as "in" or "through" the door.

Verbs tell of something to be done—

To "sing" or "laugh," "jump," "skip" or "run."

How things are done the adverbs tell,

As "slowly," "quickly," "ill" or "well."

Conjunctions join the words together,

As men "or" women, wind "and" weather.

An interjection shows surprise,

As "Oh!" how pretty! "Ah!" how wise!

The whole are called nine parts of speech,

Which reading, writing, speaking teach.

—*Scrap Book*.

A SUGGESTIVE SIGN

"Annual Sale Now On." "Don't go elsewhere to be cheated—come in here."

GET UP AND SCRATCH

Said one little chick, with a funny little quirm,

"I wish I could find a nice fat worm."

Said another little chick, with a queer little shrug,

"I wish I could find a nice little bug."

Said a third little chick, with a queer little squeal,

"I wish I could find some nice, yellow meal."

"Look here," said the mother, from the green garden patch,

"If you want any breakfast, just you get up and scratch."

MARY had a little lamb

With which she used to play,

But Mary must an heiress be

To own a lamb today.

—*Penberthy Engineer and Fireman*.



FREE PUBLIC LIBRARY BUILDING



COLGATE BUILDING



HIGH SCHOOL BUILDING

"Know Our City"

Prominent Buildings in Jersey City
whose Steel Work is protected with

DIXON'S SILICA GRAPHITE PAINT



COURT HOUSE BUILDING



UNION TRUST CO. BUILDING



POST OFFICE BUILDING



LORILLARD BUILDINGS

GRAPHITE

VOL. XIV.

JULY, 1912.

No. 7.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

VACATION

"If I had to say 'old clothes' once or twice a day I would pronounce it as you do," said an itinerant dealer, "but I have to say it hundreds of times every day and so I say 'ol' clo.' Everyone knows what I mean and it is easier for my throat." Everyone consciously or unconsciously learns the lesson taught by the 'ol' clo' man. Daily tasks become routine along lines of least resistance. The object of a vacation is to provide rest from routine, to shift the bearings and to secure a change of food and air.

Many persons imagine that a strenuous vacation filled with new sensations is the desirable change and for that reason they indulge in the pursuit of pleasure during a vacation and return worn out to rest at work.

A vacation wisely spent adds health and vigor. It should be spent restfully, not riotously.

The above is from the *Jersey City Journal* and is very timely. The Joseph Dixon Crucible Company have ninety employees in their office. Each employee is entitled to two weeks' vacation, which means that the Dixon Company gives as vacation time, 180 weeks, or $3\frac{1}{2}$ years.

The Dixon Company give this time with the expectation that the employees will wisely spend their vacation and add to their health and vigor that their daily tasks and routine work may rest more lightly upon them.

The Dixon Company extends the same vacation period to all of the employees at its branch offices, so that the aggregate of time given is greatly increased. This vacation time is given without the loss of pay.

PAINT DEFIES STREAM OF SULPHURIC WATER

Mr. Emery C. Read is the County Engineer and Surveyor of Franklin, Pa. Experience has endowed Mr. Read with a liberal knowledge of his profession and his work is correspondingly well known.

Before the use of concrete became so extensive many problems hindered the progress of engineers. In particular did they seek for a material to resist the action of corrosive influences upon metal surfaces. In certain instances these in-

fluences were so constant and the decay of metal occurred with such frequency that it became a problem of no small importance.

It is with reference to the above conditions that Mr. Read writes the following interesting letter:

April 30, 1912.

Joseph Dixon Crucible Company,
1020 Arch Street, Philadelphia, Pa.

GENTLEMEN:—In 1889, while constructing the water works for the Osceola Water Company, at Osceola Mills, Pa., we had to cross a small stream (Powellton Run) with the main line of the pipe. This stream was strongly charged with sulphur water from the Powellton mines, the water in the mine was so strong with sulphur that when the sixteen and twenty pound rails came in contact with the mine water, they were so badly eaten and corroded that it was necessary to put down new rail sections every year and sometimes oftener. After learning of this I concluded that in order to preserve the water pipes, when laid in the stream carrying such water, it would be necessary to find some kind of coating for protection of the iron. We at that time did not know much about the efficiency of concrete for this purpose and sought a paint.

I wrote to a number of concerns about a paint and none of them except Dixon had anything to suggest or offer. I wrote Dixon and ordered seven gallons, the amount estimated by them as necessary for the work. When the paint came I had the pipe jointed and placed on trestles and I painted it seven coats, and when thoroughly dried, we lowered the pipe into place and covered it.

Where the pipe lies in the channel it is constantly wet with the sulphur water flowing over it and the pipe was in perfect condition at the time of last inquiry made by me last summer.

Yours very truly,
(Signed) EMERY C. READ,
Civil Engineer.

The service of Dixon's Silica-Graphite Paint may well be likened to that of concrete. In hundreds of concrete structures Dixon's Silica-Graphite Paint serves to prevent the many destructive elements from reaching the inside steel work and in many instances where the cost of concrete or its adaptability are factors that prohibit its use, Dixon's Silica-Graphite Paint has proven its ability to "wear like iron."

The natural question after reading the above experience with Dixon's Silica-Graphite Paint is, "How much longer would it last under normal conditions?" We shall be glad to hear from all who bear a paint problem and, if durability is sought, we can furnish records that will surprise our correspondents.

ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

**Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.**

OFFICERS:

President—GEORGE T. SMITH
Vice Pres. & Counsel—WILLIAM H. CORBIN
Treasurer—GEORGE E. LONG
Secretary—HARRY DAILEY
Ass't Treas. & Ass't Sec'y—J. H. SCHERMERHORN

DIRECTORS:

GEORGE T. SMITH	WILLIAM H. CORBIN
GEORGE E. LONG	EDWARD L. YOUNG
WILLIAM MURRAY	HARRY DAILEY
WILLIAM G. BUMSTED	

OFFICES AND SALESROOMS:

NEW YORK SALESROOM, 68 Reade Street.
 PHILADELPHIA SALESROOM, 1020 Arch Street.
 SAN FRANCISCO SALESROOM, 155 Second Street.
 CHICAGO OFFICE, 1324 Monadnock Block.
 BOSTON OFFICE, 648 John Hancock Building.
 PITTSBURG OFFICE, Wabash Terminal Building.
 ST. LOUIS OFFICE, 501 Victoria Building
 WASHINGTON, D. C., OFFICE, 1410 H Street, N. W.
 BALTIMORE OFFICE, 1005 Union Trust Building.
 BUFFALO OFFICE, 72 Erie County Savings Bank Building.
 ATLANTA OFFICE, Fourth National Bank Building.
 EUROPEAN AGENTS,
 Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

WE USE OUR OWN MEDICINE

On June 1st, 1912, our Pierce-Arrow truck left 54th Street and Broadway for a trip to our mines at Ticonderoga, N. Y. The truck was driven by Thomas Meehan.

Our Assistant Secretary and Treasurer, Mr. J. H. Schermerhorn, who accompanied the truck, reports on his return that the entire run was about 250 miles and was made without any mechanical trouble whatever. The roads were in good condition and in one day over 135 miles were covered between Poughkeepsie and Corinth, N. Y. This day's run was remarkable in view of the fact that the maximum speed of the truck is thirteen miles per hour.

The route was via 130th Street ferry, Fort Lee Hill, Leonia,

Bogota, Hackensack, Maywood, Arcola, Hohokus, Waldwick, Allendale, Mahwah, Suffern, Ramapo, Sloatsburg, Tuxedo, Southfields, Central Valley, Highland Mills, Woodbury, Mountainville, Orr's Mills, Vails Gate, Newburgh, then by ferry to Fishkill Landing, on through Hughsonville, Wappinger's Falls, Poughkeepsie, Hyde Park, Rhinebeck, Red Hook, Nevis, Claremont, Blue Store, Livingston, Hudson, Stuyvesant Falls, Kinderhook, Schodack Center, Albany, Loudenville, Newtonville, Latham Corners, Cohoes, Waterford, Mechanicsville, Maltaville, Malta, Saratoga, Milton, South Glen Falls, Corinth, Lake George, Warrensburg, Chester-ton, Ticonderoga, Hague, arriving at Graphite, N. Y., on June third.

They were indebted to the Automobile Club of America, New York City, for the route description.

This Pierce-Arrow truck has run over 7,000 miles in eleven months, without any mechanical trouble, and the parts and bearings are apparently in as good condition as when the truck was purchased. Dixon's Graphite Grease No. 677 is used in the worm drive, and there apparently is no sign of wear. Graphite Grease No. 677 is also used in the transmission gears and wheel spindles and all grease cups are filled with Dixon's Graphite Cup Grease No. 4.

The work of this automobile has been particularly severe for the reason that all last summer the truck was used for hauling coal from Hague, N. Y., to Graphite, N. Y., a distance of four miles with a rise of about 1,400 feet, and the truck was loaded with from four to five tons of coal on each trip up the hills. The road is an ordinary country road, mostly sand, but in sections clay and in bad weather very slippery.

Last fall this truck was brought from Ticonderoga to the factory at Jersey City, to be used in our regular delivery service. Frequent trips were made as far as New Haven, Conn., a distance of 178 miles for the round trip.

DIPLOMATIC AND CONSULAR SERVICES

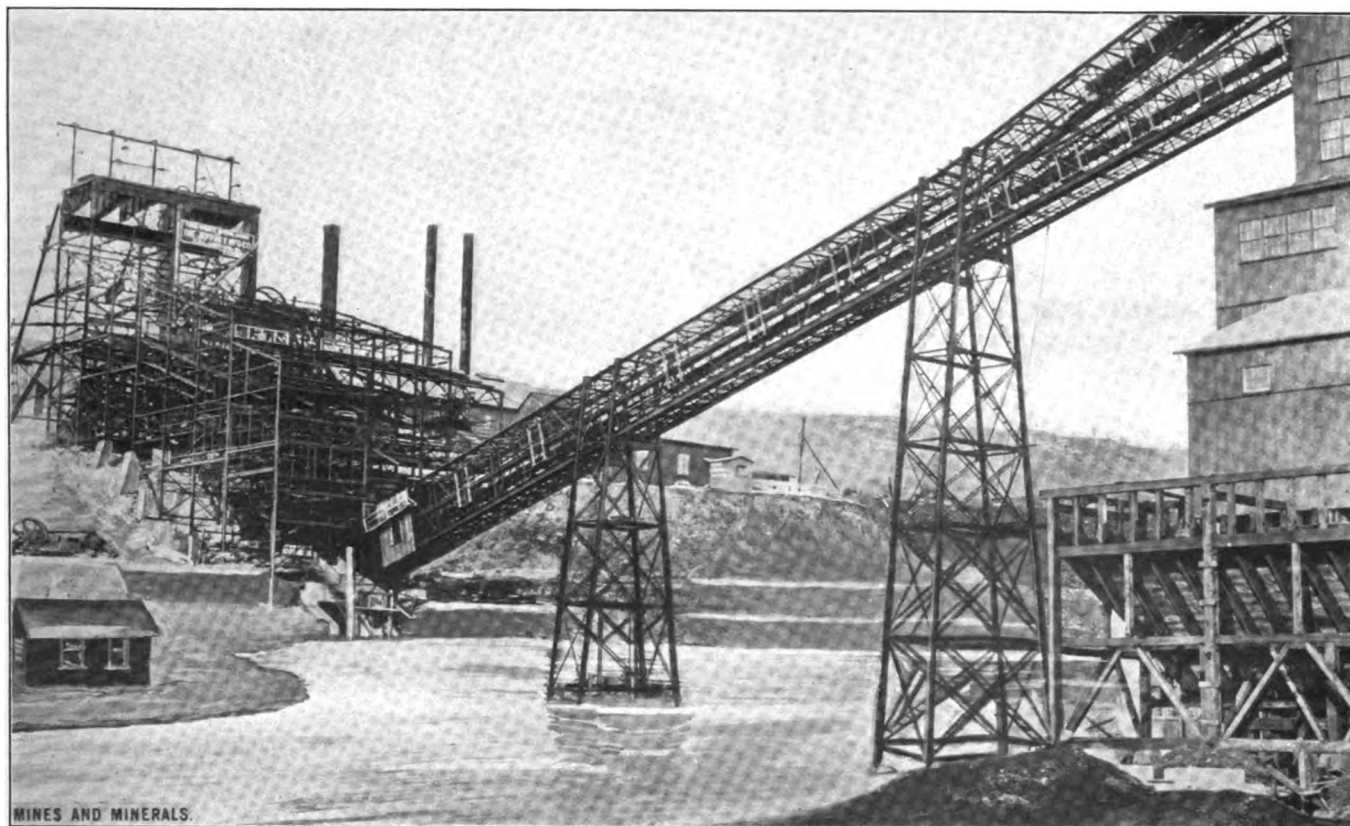
Huntington Wilson, Acting Secretary of State, has sent out circular and circular letter to the business men of the country, calling attention to the fact that the House of Representatives has reduced the appropriations by over \$94,000, and by so doing has abolished the entire organization with which the Department of State has been able during the past three years to extend to American commercial interests that measure of support which every other great nation extends to its national interests in foreign countries.

We are told that if the bill, as it now is, should pass the house, it would wreck the whole re-organized Department of State, which has given the American people a modernized State Department. That it will almost nullify all the efforts of the whole Diplomatic and Consular Service establishment, because these are useless without an efficient State Department to direct them. Every American manufacturer who is doing or expects to do an export business is interested in this matter.

STRIPED PAINT

A paint manufacturer recently received the following letter: "GENTLEMEN:—Will you please send us some of your striped paint. We want just enough for one barber pole."

—Southern Textile Bulletin.



LEHIGH COAL AND NAVIGATION COMPANY'S PLANT AT COALDALE, PA.

In the May issue of *GRAPHITE* appeared an illustration and short description of the Lehigh Coal and Navigation Company's coaling plant at Hauto, Pa. This company's modern methods of mining and transportation of coal have been developed to the highest degree of efficiency. A very interesting part of the Lehigh Coal and Navigation Company's equipment is located at Coaldale, Pa., possibly three-quarters of a mile from Lansford, the headquarters of the operating department.

The illustration on this page which appeared in *Mines and Minerals*, shows the Coaldale head-house, head-frame and pan conveyor runway. The Coaldale head-house and breaker are two separate structures planned to meet the requirements of the mine openings relative to the railroad and to deal with unusual mining conditions in an unusual manner.

The mammoth coal bed in this vicinity varies in thickness from fifty to eighty feet and is split by a bed of rock which must be removed with the coal. To add to the difficulty of separation, the bed is steep pitching, making it necessary to remove all material from the rooms, there being no place to stow gob, which probably averages twenty-five per cent of the material hoisted to the dump. To avoid sending this rock through the breaker machinery, it was decided to eliminate the greater part of it as it came from the mine, and to this end an innovation in anthracite breaker practice was planned and a head-house erected.

Like all other property of the Lehigh Coal and Navigation Company, the Coaldale plant is admirably suited to perform its work. In the erection of the Coaldale plant precautions were taken against the use of inferior materials of any nature, and as at the Hauto coaling plant all the structural steel of the

Coaldale property is protected with Dixon's Silica-Graphite Paint. Dixon's Paint is recognized by all those who have had much experience in the erection of mining plants as being particularly well adapted to the requirements of mining property. Owing to its natural power of easily resisting severe atmospheric and other metal decaying influences, Dixon's Silica-Graphite Paint has become the standard protective coating for mining property.

PREVENTING SHORT-PAID POSTAGE

In accordance with the suggestion made by the United States Department of Commerce and Labor, the Joseph Dixon Crucible Company will hereafter make use of a special colored envelope for all export business.

The *Daily Consular and Trade Report* contains the following letter, which shows how one firm has endeavored to master the situation.

"All stenographers are trained from the time they begin work at our place to use for domestic mail, United States light-colored stamped envelopes. All letters addressed to foreign countries must have a blue envelope without a postage stamp on it. Every evening the clerk who has charge of attaching stamps takes the letters in blue envelopes and after first selecting those that go to foreign countries where two cents is sufficient, such as Mexico, Canada, Cuba, Great Britain and Germany, he affixes five cent stamps to all other blue envelopes."

American manufacturers should try and escape by some such means as suggested the many criticisms made by foreigners that letters are received short of postage, especially when the penalty of such short postage is often three or four times greater than what the postage would otherwise be.



Salesman's Page



WHY DIXON'S SILICA-GRAPHITE PAINT IS SOLD READY MIXED FOR USE AND NOT IN PASTE FORM

The United States Navy, as reported in the *Journal of the American Society of Naval Engineers*, February issue of this year, has discontinued the distribution of paint in pigment form to the warships. Since this date, paint for the navy is distributed only ready mixed for use, such paint being purchased under such strict specification as to insure the greatest purity and correctness of composition.

Some years ago we discontinued the sale of Dixon's Silica-Graphite Paint in paste form, because we found that it was being reduced by the use of very inferior and adulterated oils, and to an extent which caused the paint to be applied so as to give extremely poor results.

No paint can prove satisfactory in use unless it is composed of pigments and vehicle of the right quality. The Joseph Dixon Crucible Company has never used anything as a vehicle excepting the very best linseed oil, with the addition of an only sufficient drier to give proper drying quality. The pigment used is now, as it has been for fifty years, a product of our own mines, and is unique and not sold by any other manufacturer of paints. This combination has made Dixon's Silica-Graphite Paint unequalled for long service protection of iron against every destructive agency. For fifty years it has been used by leading railroads and manufacturing corporations with unqualified success.

So long as the price of linseed oil was low, we had no difficulty as a result of selling paint in the paste form. When the price of oil went skyward, adulteration began and we were forced to abandon the sale of paint in paste form. The composition and consistency of the paint as we prepare it, has been determined by our long experience to being right, and the purchasers should see that it is always well stirred and used from the original package. "Always up to sample" is the aim of the Joseph Dixon Crucible Company in offering this product of such high repute.

PAINTING WITH DIXON'S SILICA-GRAPHITE PAINT

All surfaces before being painted, should be properly cleaned before the application of the paint, as it is of absolute importance that the paint should be in contact with the surface it is intended to protect.

The economy in the use of Dixon's Silica-Graphite Paint is not in its cost, but in its long life. Graphite and silica are absolutely inert under this kind of service. No change, physical or chemical, can occur. The pure, boiled linseed oil always used in Dixon's Paint can never be made hard or brittle because of any action of the pigment.

Dixon's Silica-Graphite Paint comes ready mixed for use. Before any paint is taken from the package, it should be

thoroughly stirred for five or ten minutes, mixing the finely ground particles of pigment with the vehicle.

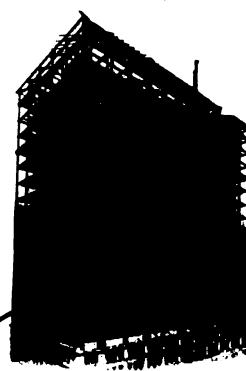
Dixon's Silica-Graphite Paint has a peerless reputation of nearly fifty years to live up to, and it does it.

THE NEW PENCIL DIXONARY

The second edition of Dixon's Pencil Guide has been mailed to thousands of pencil users who will now decide upon the Dixon Pencil best suited to their requirements.

A SINGULAR FACT ABOUT GEMS

It is a most singular fact that the most precious gems are composed of the most common substances. The diamond is the purest form of carbon and is identical in composition with ordinary charcoal or graphite without their impurities. The ruby, on the other hand, is nearly pure alumina, a substance found in profusion in every clay bank. The scientific name for crystallized alumina is corundum, and the gems comprehended under this designation are sometimes more valuable than diamonds of the same weight. The ruby, the sapphire, the oriental emerald, the oriental topaz, the oriental amethyst, the oriental aqua marine, the oriental chrysolite, the hyacinth, and other precious stones, are all alumina, the varieties of color being caused by inappreciable quantities of metallic oxydes.



Many prominent buildings in our larger cities throughout the country are protected with

Dixon's Silica-Graphite Paint

A revised list of these notable buildings has been prepared and will be sent upon request.

Joseph Dixon Crucible Co.,
Jersey City, N. J.



PLATFORM PLANK FOR SHIPPERS OF FREIGHT

The association has no part in partisan politics. No railway official is in its membership or in its councils. For years the people engaged in the group of industries making appliances for the railways and giving employment to 1,500,000 workingmen, have been studying the connection between railway regulation and their prosperity. They are convinced that so vast an army of working people may as properly as any other element call attention to their desires, their necessities.

The railroad managers face the question whether or not they can pay the interest which they would have to promise or the dividends which they would practically have to predict. They have no way of knowing what rates they will be permitted to charge and hence what income they will have.

**DIXON THE STANDARD WITH AUTOMOBILE
RACE DRIVERS**

Of the first eight cars finishing, the following list is of interest.

No.	Driver	Car	Lubricants	Used
1	Dawson	National	?	
2	Tetzlaff	Fiat	Dixon	
3	Hughes	Mercer	Dixon	
4	Merz	Stutz	Dixon	
5	Endicott	Schacht	Dixon	
6	Zengle	Stutz	Dixon	
7	Jenkins	White	Dixon	
8	Horan	Lozier	Dixon	

EASIER

"How do you spell Schenectady?" asked the stenographer.
 "Sc—, S-c-e-r-e-r—Tell him I'll meet him in Albany."



DIXON



C.A. WILLIAMSON 1910



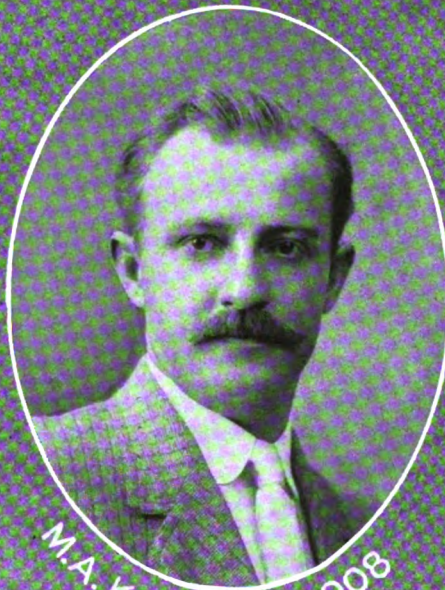
J.K. MOSES. 1899



JOHN M. READY



W.M. VAN DORN 1911



M.A. KOERBER 1908



PH MEYER

NEW
SALES
JOSEPH
CRUCIBLE



MANAGER 1885



R. F. LEONARD 1908



B. KOEHLER 1910



ERS 1885



C. B. JONES 1909



F. H. MIX 1909



DIXON

YORK
FORCE
DIXON
COMPANY

METROPOLITAN DISTRICT SALESFORCE OF THE JOSEPH DIXON CRUCIBLE COMPANY

Dixon quality and the ultimate economy of the best, as typified in all Dixon products, is the selling principle that has brought so large a measure of success to our Metropolitan District under the able management of John M. Ready. The office and salesroom of this district are located at 68 Reade Street, New York City, and the district comprises Greater New York, Long Island, Westchester and Rockland Counties and Northern New Jersey.

Mr. John M. Ready was born in New Philadelphia, Ohio, on Monday, September 10th, 18— well never mind, he is still a young man. He is the only son of the late Hon. Armstead T. Ready, who was prominent in political circles, having served in both houses of the Ohio Legislature.

Mr. Ready began his business life with one of the leading oil companies in Cleveland, but in 1885 left that company to come with the Joseph Dixon Crucible Company as traveling representative, covering all important towns between Pittsburgh and Denver.

So successful was Mr. Ready in securing business and making friends that he was given charge of the Chicago Branch of the Dixon Company, where he proved himself in every way qualified to be a manager of men and a getter of business. Two years later, in 1899, Mr. Ready was made manager of the New York branch.

Probably it is not out of the way to say that Mr. Ready established a reputation as the best known salesman in the United States. Many of the leading concerns in the United States who today make use of the products of the Dixon Company, have continued their intimate personal relations with Mr. Ready. Mr. Ready's office is a rendezvous for visiting buyers and partners in houses on his old routes, who do not consider their New York trip complete without a talk over old times.

Beginning as he did twenty-seven years ago, Mr. Ready is fully equipped by his experience and training and through his having traveled through all of the states with the exception of the extreme Eastern States, to fill the important position of manager of the most important branch of the Dixon Company.

Mr. Ready has pleasant, not to say luxurious bachelor apartments in the best part of New York City. He pays every attention to his personal comfort and is a charming entertainer of those who are honored with his personal friendship. He has fully demonstrated the saying that the only way to have a friend is to be one. No one could be a better friend to those who are worthy of his friendship.

Mr. Ready has infinite faith in the superior quality of Dixon's products and believes that the great majority of buyers prefer the very best to the very cheapest when they are convinced of the merits of the very best. This policy has brought an almost three-fold increase in the sales of the New York Office since Mr. Ready has been in charge. His faith in "Dixon's" is a constant inspiration to the efficient corps of salesmen who are assisting Mr. Ready in the selling department of the Metropolitan District and the absolute certainty of "Dixon's" has enabled each one of these salesmen to build up a steadily growing trade in his respective department.

Mr. Ready has associated with him a carefully trained force of salesmen. Though occasionally all are general sales-

men, each has his particular line and each his particular territory.

Phil Meyers shares with Mr. Ready the distinction of being a Dixonite of twenty-seven years standing. Mr. Meyers' name is synonymous with Dixon's American Graphite Pencils to hundreds of Manhattan buyers. He counts many personal friends among those upon whom he calls as a Dixon representative.

Mr. J. K. Moses may also be termed a veteran member of the Metropolitan Salesforce—we say veteran, though of course we mean of experience, for Mr. Moses' activities would reflect credit upon many younger men. Mr. Moses looks after the foundry trade in Greater New York.

In Mr. F. H. Mix, Mr. Ready possesses an able and active assistant who allows no detail of the inside management to escape his attention. Mr. Mix is alert to all that in any way affects the interests of Mr. Ready and the New York Office. "Eternal vigilance" is his motto and he deserves the confidence which Mr. Ready places in him.

Mr. M. A. Koerber acquired an intimate knowledge of Dixon's Graphite Lubricants and became interested in the remarkable service they afforded in the various parts of the automobile. When the opportunity recently presented itself, Mr. Koerber transferred his knowledge of graphite lubrication to the automobile field and since then has contributed much to the joy of motor car owners and has saved unnecessary wear upon their cars.

Mr. R. F. Leonard is a crucible man. Mr. Leonard covers that part of the Metropolitan District outside of greater New York. Mr. Leonard and Mr. Moses are the two men upon whom Manager Ready relies to watch the development of Dixon's foundry trade and to see that Dixon's Crucibles are used wherever the need of better foundry practice is felt.

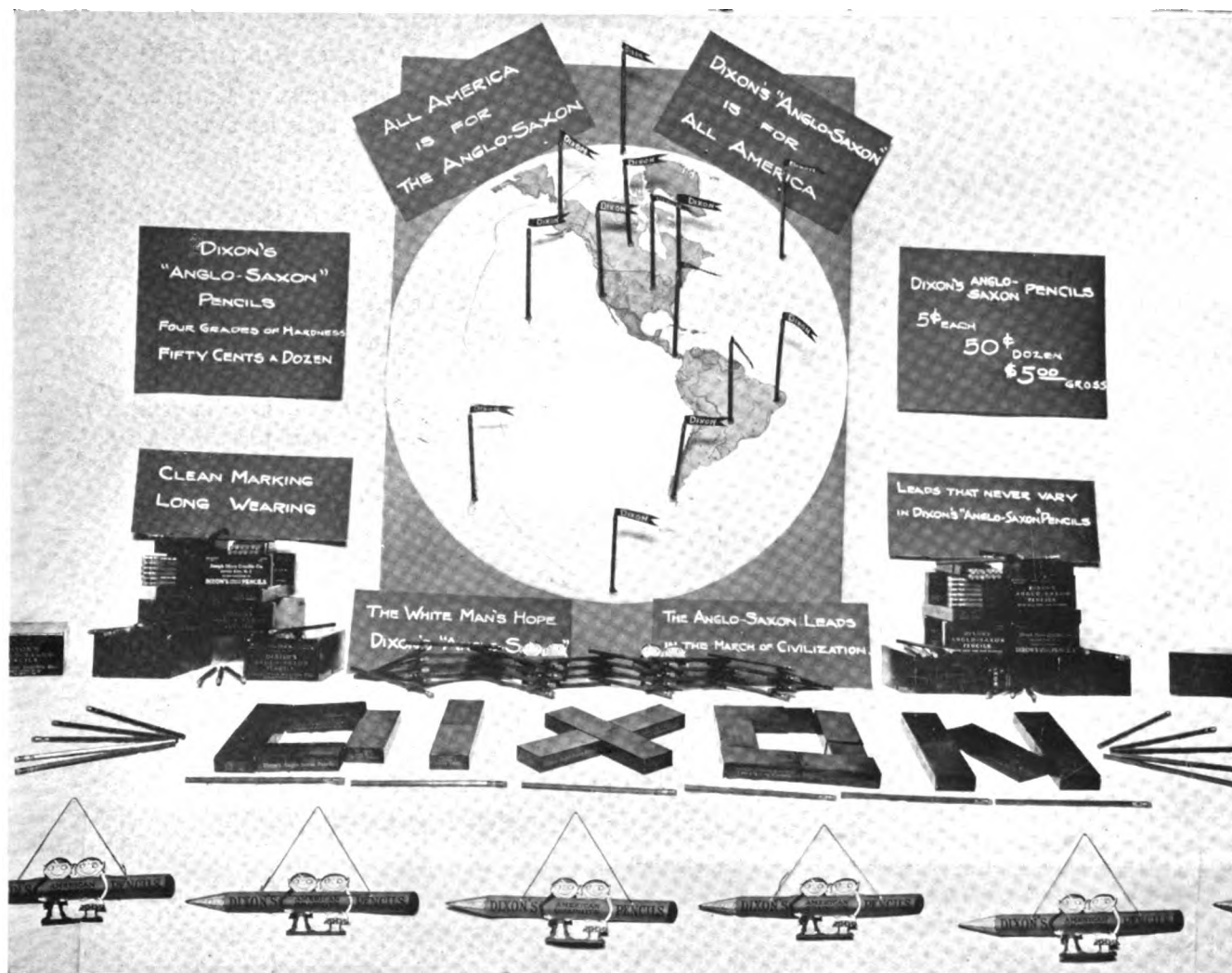
Mr. C. B. Jones is another Metropolitan District man whose time is devoted to recruiting for the great army of Dixon Pencil users. His work has helped to build a larger pencil department.

Mr. C. A. Williamson is the electrical man of the New York Salesforce. To many who are unfamiliar with Dixon's Electrical Specialties it will be surprising to learn that these graphite products are used in a large and widely varied field. Mr. Williamson travels the entire territory of the district.

The Dixon Company is particularly interested in its export trade and its representatives abroad are supplemented by others at home. Mr. B. Koehler is familiar with the business development of the American exporter and his connection with the Dixon Company promises better relations with large New York jobbers.

Those of our readers who remember the picture of Mr. H. B. Van Dorn of the Dixon Company's Boston Salesforce may note the resemblance between him and Mr. W. M. Van Dorn, his brother. Mr. Van Dorn, like his brother in Boston, is a pencil man and, in addition, sells graphite lubricants.

The New York Salesforce is to be congratulated, first, upon its handsome appearance, next, upon its ability as Dixon representatives, and finally, upon the ability of manager Ready to gather together men who are so well equipped, both mentally and physically, to advance the Dixon Standard year by year, to a bigger and better goal.



A PENCIL DISPLAY FROM BOSTON

A pencil exhibit that attracted considerable attention in Boston is one of Dixon's Anglo-Saxon Pencils shown in the window of Thomas Groom & Company, Boston's well known stationers.

In the center of the picture is the new world where Dixon's Anglo-Saxon Pencils are the standard. Appropriate signs surround this, while below are pencils attractively arranged, together with the irresistible Dixon Brownies.

This is one of the latest of many clever designs which have originated at Dixon's Boston Office. The prominent stationers do not fail to appreciate the advantages derived from such advertising.

THE PRODUCTION OF GRAPHITE IN 1911

In an advance chapter from Mineral Resources of the United States Calendar Year 1911, Mr. Edson S. Bastin tells us that the production of natural graphite in the United States is sporadic, because the milling of disseminated flake graphite is still in the experimental stage and the product is of uneven grade. The cause of the unsatisfactory condition of the domestic industry is to be found in (1) the superiority of much of the Ceylon graphite to any graphite that is mined in this country; (2) the low cost of labor in Ceylon, which permits cheap mining, careful sorting, rubbing up and blending of the

product; (3) the facts that the largest domestic deposits are schists which carry small flakes of graphite disseminated through them and that the separation of the graphite from the accompanying minerals, especially mica, in such rocks is a problem of unusual difficulty.

Mr. Bastin adds, "The one firm which can be said to have become firmly established in the treatment of such graphite rocks, the Joseph Dixon Crucible Company, possesses important advantages over other firms in that it manufactures much of its product into graphite paints, graphite grease, etc., before placing it on the market. When the margin of profit is small, such control of markets becomes of vital importance."

We are further told that today there are more abandoned graphite mines and mills in the United States than there are in operation. The number of times that some of these properties have changed hands in the course of a few years evinces a record of misrepresentation and disappointment that can hardly be equaled in any other branch of mining, and many properties have been notoriously associated with stock manipulation of doubtful character.

It would be well for those who are thinking of investing in graphite mines or of entering the field of mining to address Mr. George Otis Smith, Director of the Department of Interior, United States Geological Survey, and obtain a copy of Mr. Bastin's report on "The Production of Graphite."



BRIDGE, BUFFALO, LOCKPORT AND ROCHESTER RAILWAY.

Many readers of GRAPHITE are no doubt at this time suffering from sun waves or some other form of hot weather and it is our hope that the illustrations which appear on this page will afford them both mental and physical refreshment.

The illustrations show two bridges over the new Barge Canal, a canal which was cut through solid rock. Some idea of the difficulties experienced in the construction of this canal may be gained from one of our illustrations. The bridge in the foreground is a part of the Buffalo, Lockport and Rochester Railway and is located one mile west of Rochester. The bridge in the background is one of the New York Central structures. The Buffalo, Lockport and Rochester Railway became part of the Beebe System of Trolley Lines early in 1911, and the maintenance of its property has since had the attention of Mr. W. A. Steckel, roadmaster of the Beebe System.

Mr. Steckel has known and used Dixon's Silica-Graphite Paint for many years. His experiences with it on bridges, viaducts and other structures belonging to the Beebe System has convinced him that no other paint can approach the durability of Dixon's Paint. Mr. Steckel used Dixon's Paint on the bridge illustrated and expects to have no further occasion to paint this structure for some time.



SO FAR as the recollection of the oldest inhabitant goes, street cars, that is, horse cars, have always existed, and so far as the recollection of the oldest housekeeper goes, the name Dixon has always existed. As a matter of fact the first horse railroad was built in 1826-7 and at that time Joseph Dixon, the founder of the Dixon Company established his business in Dixon's "Carburet of Iron" Stove Polish and Dixon's Plumbago Crucibles.

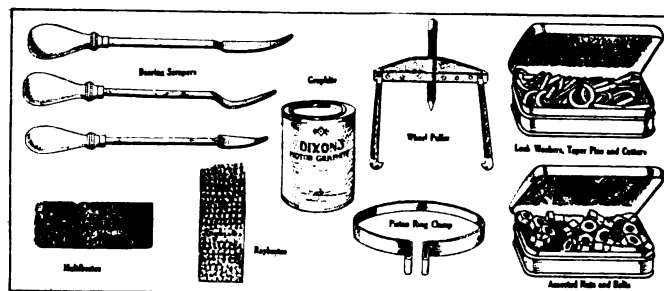
DON'T SPEAK OF FAULTS

By RENICE RADCLIFFER

When you are discussing a neighbor
Or a friend who is far away,
Or an absent one of the family
With the caller of today,
Just speak of their wisdom and kindness,
'Tis all you should care to recall:
Pray, do not allude to their failings—
Don't speak of their faults at all.

When a fellow creature has fallen,
And society stares with a frown,
Just stretch out your hand in assistance,
Don't strike a man when he's down;
Condemn not, in like provocation
Perhaps you also might fall:
So shield with a mantle of silence—
Don't speak of his faults at all.

—*Farm, Stock and Home.*



FLAKE GRAPHITE FOR OVERHAULING THE CAR

In a recent issue of the *Automobile Journal*, Mr. C. P. Shattuck offers some valuable suggestions to the ever increasing number of automobile owners who make it a practice to each year overhaul their cars.

Concerning the equipment Mr. Shattuck illustrates his article with many group pictures of the articles and material he recommends. Our illustration above is reproduced from Mr. Shattuck's article and shows a can of Dixon's Flake Graphite. Concerning the use of graphite Mr. Shattuck says:

"Graphite has many uses. A can of flake or fine graphite may be utilized for many purposes. It is used as an anti-rusting compound for rims, between the leaves of the springs, on the valve caps and numerous other places where heat will burn up grease or oil. It is an excellent lubricant, resisting as it does the action of water and heat and in addition fills the pores of the surfaces of contacting metal."

Motorists who have found Dixon's Flake Graphite an excellent cure for the many small ills of the motor car have in this way been led to use Dixon's Automobile Lubricants and no wiser course can be taken than to follow the example of these men who do their own investigating.

EVERY pound of graphite that is sold for lubricating purposes is sold on the reputation made and sustained by the Dixon Products. All graphite is not lubricating graphite and one should be very careful what they use and be sure that they get only the genuine Dixon Lubricating Graphite, because inferior grades will cause disastrous results.



THROUGH GEORGIA WITH JACK LEWIS

Jack Lewis, manager of the Dixon Company's Atlanta Office, is an advertising man and a prominent member of the Atlanta Ad. Men's Club—a club noted for its progressive spirit.

As an advertising man, Mr. Lewis believes in injecting the personal element, and our illustration shows him resting by the road side during a recent "Round-the-State" tour of Georgia. His companions in rest are the Hon. Steve R. Johnston (left), now running for Mayor of Atlanta, and Fuzzy Woodruff (center), of the *Atlanta Constitution*.

During the tour Mr. Lewis and two other members of the Atlanta Ad. Men's Club occupied an Imperial Car driven by C. A. Waite. The "Absolutely Car," as the Imperial was called, made quite a hit in each of the many places through which the tourists passed and, as Fuzzy Woodruff wrote, they were "filled with sandwiches, enthusiasm and spirits of Milwaukee."

The "Absolutely Car" was lubricated for the entire trip of one thousand miles with Dixon's No. 677 and Dixon's No. 5 Cup Grease, which no doubt accounts for the fact that it finished, taking first prize in its class.

Mr. Lewis soon after starting, became a popular and much sought part of the procession, for he distributed souvenir packages of Dixon's American Graphite Pencils, Erasers and Holders. He was unanimously voted the "all write" man.

QUALITY VS. QUANTITY

In buying grease are you governed by the price charged per pound or by the service the grease will give? Dixon's Everlasting Graphite Axle Grease costs more per pound than other axle grease, but five dollars worth of it will give far longer service than five dollars worth of other kinds. In other words, a pound of Dixon's Axle Grease is equivalent to more than a pound of other greases and therefore it is not fair to judge it according to the price per unit quantity.

Grease the axles on one side of your wagon with Dixon's and grease the other side with the grease you are now using and see which side needs greasing again first. It is safe to say that the side lubricated with Dixon's Grease will last at least three times as long. The axles may appear dry, but they do not necessarily need more grease. So long as there is a dull velvety polish they will run without heating. The dull polish is really a thin coating of flake graphite, so smooth

and free from friction that more "dope" is not required, as is the case when an axle lubricated with ordinary grease becomes dry.

Pound for pound, Dixon's Graphite Axle Grease represents more value than any other axle grease and that is the reason why Dixon's is actually the cheapest and most satisfactory to use in spite of its seemingly high price.

The same argument is equally applicable to each of the other special graphite greases manufactured by this company. In every case, provided the proper grade of grease has been selected, the Dixon Lubricant will give longer and better service than any of its competitors, simply because the mineral grease base has been scientifically combined with the correct grade and proportion of fine Ticonderoga flake graphite.

A WOMAN'S CHANCE OF MARRYING

This has been published many times, but nevertheless it may be of interest to some of our readers.

Many women say that they would not marry the best man living, but still each one of them has a chance. It may be one to fifty or it may be ten to one that she will. Her chances are about as follows:

Between the ages of 15 and 20 years,	14-½%
" " " " 20 and 25 "	52%
" " " " 25 and 30 "	18%
" " " " 30 and 35 "	15-½%
" " " " 35 and 40 "	3-¾%
" " " " 40 and 45 "	2-½%
" " " " 45 and 50 "	¾ of 1%
" " " " 50 and 56 "	¼ of 1%

There are girls with the Dixon Company whose ages range all the way from fifteen to fifty-six and even older. We can suit all.

WHY TEA?

We often read in travelers' and hunters' tales of the making of a cup or bowl of tea, and have often wondered, why not coffee? Our answer to our own inquiry was always, probably it is far more convenient to carry tea than coffee.

We now read the following in *Forest and Stream*:

"An explanation of why tea is more "staying" as a camping beverage than coffee is in order. It retards the waste of tissue. Why? Tea contains tannin; and, just as tannin preserves skin (and, if the process is continued long enough, converts it into leather), so does the tea infusion, in a measure, help preserve the bodily organs.

Of the teas, the pure black teas like Cianchang Suchong, Kongu and Asam are more sustaining than Ceylon teas and require slightly less sugar than green or mixed teas.

Medicinally, strong hot tea, without milk, is a splendid stand-by in bowel trouble and I have often checked by it apprehensive signs of a choleric threatening. In headache and to cure melancholia, it is superb.

Coffee has not the sustaining or carrying power of tea. All arctic workers testify to their preference for tea, though American campers prefer their coffee."

DIXON'S graphite publications sent free upon request.



Good To The Last Inch

Dixon's Pencils are not whittled into waste baskets. They stay and work to the bitter end—they *make good*. The watchword at the Dixon works is *quality*. Every man *must* show his capability in his results. So the "make good" in Dixon Pencils *starts* right and stays so.

DIXON'S AMERICAN GRAPHITE PENCILS

are for every man, for every purpose, and there is a sort for every business requirement—made *right* for folk who demand quality. The cedar cases—straight-grained and knotless. The graphite—smooth, clean, gritless. You may not know pencil quality when you see it—you *need* no knowledge—just say "*Dixon.*"

Send now for "Dixon's Guide for Pencil Users. Tells you the proper sort for every purpose.

The illustration for this advertisement was made entirely with a Dixon Pencil.

JOSEPH DIXON CRUCIBLE COMPANY
Jersey City, N. J.

GRAPHITE

VOL. XIV.

AUGUST, 1912.

No. 8.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

ADVICE TO THE BUSINESS GIRL

In a talk to girls in business life the *New York Telegram* says: Brilliancy, that gift of the gods which all desire and few ever attain, seems the most important asset of the working girl; but it is always the earnest and conscientious girl who succeeds where her brilliant sister fails.

The girl who is not conscientious never gets very far unless she is unusually clever. If she is unusually clever she can make her employer believe for a time at least that she has his business interest at heart, but she cannot deceive him very long.

To begin with, the girl who is not conscientious is never quite prompt. Morning after morning she gets to her office five or ten minutes after time.

To her these few minutes seem a small matter, it doesn't disturb her conscience, and she doesn't realize that these few minutes in time amount to hours and even days.

The girl who is not prompt in the morning is usually not prompt at the luncheon time and at that time wastes still more minutes.

Girls should remember that they are not expected to come to the office to gossip or indulge in small talk, no matter how very clever they may be in both. Neither has she the right to read newspapers or books during business hours unless she is absolutely out of work, and even then it doesn't look well.

There is always something that the girl earnestly bent on earning her salary can find to do to tide over the slack moments of office work.

These remarks apply equally well to boys.—*Argonaut.*

MUCH has been said, of late, in regard to the use of graphite in boilers to make scale removal easy and we have much pleasure in reproducing below a letter from Mr. Wm. H. Manning, chief engineer, A. D. Matthews' Sons, Brooklyn, N. Y.

June 26, 1912.

"In reply to a personal request by your representative, Mr. C. A. Williamson, in regard to the use of graphite in steam boilers for removing scales and cleansing purposes, I beg to

state that I have never used anything that equals it. I have used it since April 1st up to the present time, on two 250 H. P. water tube boilers. At the expiration of sixty days, I am pleased to state that in all my experience of thirty years, I have never used anything to equal graphite in removing scales from steam boilers. I am still continuing its use, and shall continue to do so as long as I can purchase the material for same."

Mr. Manning used the Dixon Fine Flake Graphite. Formerly it took four men about three and a half days to clean the caps of their boilers. The last time they were opened, two men cleaned them in a little over a day.

THE YES-MAN

By FREEMAN TILDEN

All business men, whether employers or employees, will find a very interesting story under the above heading in *The Century* for July, 1912. The Dixon Company has called the attention of all its branch managers to this article and has suggested that these branch managers might find it interesting enough to warrant them sending copies to their salesmen.

Once upon a time the Dixon Company had a Yes-man and the company was obliged to let him go, even though he had been here for a number of years. He was a foreman in the factory, whose room was largely holding back the output of the factory. He was not able to increase the output in his department and he pleaded hard to be allowed to remain. After he left, the new foreman easily doubled the output of that department, and the man who had been relieved eventually became a prosperous coal dealer and an employer of help.

FAVORS ONE CENT LETTER POSTAGE

Hon. James J. Britt, Third Assistant Postmaster General, has written:

"In my judgment, a readjustment of postal rates, so that each class of mail matter shall pay cost of service, will make possible not only one cent letter postage, but also many improvements in the postal service."

SAYS the *Wood Worker*: We used to call it oiling; now it is lubrication. It means a difference too, as well as a distinction. Think it over and if you are not able to see the point try writing some of the grease or graphite people."

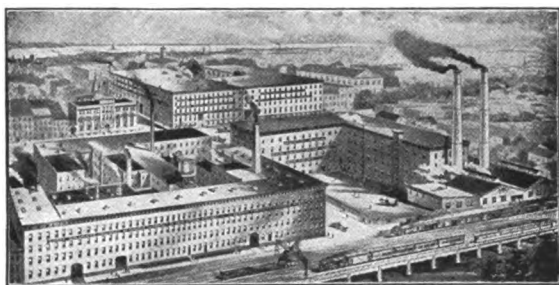
DIXON'S graphite publications sent free upon request.



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

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Vice Pres. & Counsel—WILLIAM H. CORBIN
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BALTIMORE OFFICE, 1005 Union Trust Building.
BUFFALO OFFICE, 72 Erie County Savings Bank Building.
ATLANTA OFFICE, Fourth National Bank Building.
EUROPEAN AGENTS,
Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

CURDLED LUBRICANT

The Gaillot Brothers, makers of Anzana motors and declared devotees of certain lubricating oils, assert in the form of a story describing their experience, that the use of defloculated graphite for cylinder lubrication is rendered highly precarious by the extraordinary effect produced by the slightest trace of acidity in or with the oil in which the graphite is mixed. Such acidity, it is alleged, causes precipitation and accumulation of the graphite at every joint; for example, those of the connecting rod, and the accumulation all but stops the motor."

—From *La Revue de l'Automobile*.

DIXON'S graphite publications sent free upon request.

155 CRUCIBLES—6284 HEATS

Here is an actual foundry record of the number of heats obtained from Dixon's Graphite Crucibles during the period of one year. The crucibles were used in four Fisher oil furnaces averaging about six heats per day per furnace. The metal used was one-third red brass and two-thirds yellow brass. More heats might have been obtained, we are told, were the concern (name furnished to those entitled to the information) willing to risk the use of many pots which wore thin.

39	40	36	38	40	48	40	44	43	42
43	46	37	48	40	46	40	44	40	44
38	35	40	45	43	46	43	36	41	46
39	40	38	45	42	44	40	39	41	41
38	34	37	48	42	48	43	43	42	44
34	40	34	47	42	46	41	40	37	41
45	36	37	38	44	44	40	41	35	44
46	38	34	47	43	42	42	45	31	47
45	30	35	38	47	45	25	25	39	41
43	36	37	39	43	40	47	43	38	45
42	35	39	43	48	41	41	42	34	42
43	37	36	20	48	41	32	35	41	41
42	38	42	45	43	40	42	45	41	34
41	40	36	41	48	40	38	41	40	32
44	36	38	41	46	37	44	48	36	—
43	34	39	40	46	39				

Grand Total, 6284

Average number of heats, 40 84/155. Lowest number of heats, 20.

The above record which we mailed in the form of a postal brings us the following reply from one of our customers. It is only one of the many verifications which come to us, of the quality and economy found in the use of Dixon Crucibles.

June 25, 1912.

Joseph Dixon Crucible Company,
Jersey City, N. J.

DEAR SIRs:—Your little card concerning the durability of your crucibles is very interesting.

As you know we use No. 8 pots, on the same kind of metal as described in your card, and run rarely less than forty-five and sometimes fifty-four heats to each.

Our moulder claims that his average is fifty-one or more.

Thinking that this might interest you, we remain,

Yours very truly,

WE READ in one of the automobile papers of a new medicine chest for garages, and we are told that the chest contains everything needed for the healing of burns, setting of broken bones, and "first-aid" helps. "First-aid" helps for the healing of burns are all right, but for the setting of broken bones, the most skillful surgeon is none too good.

DAVE LEWIS

Writes: "I am thoroughly convinced of the merits of Dixon's Automobile Lubricants and will both use and recommend them in the future."

"Lubricating The Motor" and
Sample No. 8—G on request.

JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.





POST OFFICE BUILDING, ELIZABETH, N. J.

Uncle Sam is very proud of his post office building at Elizabeth, N. J., and though hardly necessary to say, so are all Elizabethians, especially those who have had occasion to point out this building to visitors.

Our illustration shows this modern three story, fireproof, brick and stone building. Mr. J. Knox Taylor of the Treasury Department, D. C., was the supervising architect; The Cambria Steel Company, steel contractors; and Chas. H. Peckworth, general contractor.

Uncle Sam is a discriminating user of paint—as all large users are. The merits of any material are thoroughly investigated before they are used by our Government. Uncle Sam is a large customer of the Dixon Company and Dixon's Silica-Graphite Paint protects the structural steel work on a number of Federal buildings, including many post offices. The post office building at Elizabeth, N. J., is protected from inside corrosion and rust with Dixon's Silica-Graphite Paint, Natural and Black Colors.

ON EMPTYING the drawer of an old time desk, the following fell out:

"We have used Dixon's Founders Wash on casting steam cylinders and general engine work and cheerfully recommend it as it accomplishes all you claim for it."

This was written January 26, 1874, by Benjamin Ryer & Son of Brooklyn, N. Y. The day of recommendations for old and established firms like the Dixon Company has practically gone by. Every one today is well aware of the standard quality of all the Dixon products and equally well aware that if the Dixon Company make a statement, "it is so."

PUBLIC MEN LIKE THE DIXON PENCIL

We were told that General Grant wrote one of his longest and best presidential messages with a Dixon American Graphite S M Pencil and that President Hayes and James G. Blaine considered the Dixon Pencil their favorites for continuous writing. Now we are told that Ormsby McHarg, the well known Roosevelt worker, carries a Dixon Pencil that was at this writing only an inch long.

"I started in this campaign with that lead pencil. I've carried it 30,000 miles, and I'm not going to quit using it until I count the Roosevelt vote with it in the national convention," he said, "then I'm going to tie a silk string to it."

It is always pleasing to know that occasionally we are fortunate enough to print something in GRAPHITE that meets with special commendation. We have a letter from one of the well-known colleges that reads as follows:

"Could you spare me another copy of GRAPHITE for June, 1912? My copy has just arrived and I find a Metric-English conversion table in it, which I should like to cut out and mount for reference, and I don't like to mutilate the present copy, as this is passed around among the fellows and much enjoyed by them."



TEDDY TETZLAFF

Writes that he "would rather pay \$5.00 per pound for Dixon's Automobile Lubricants than use any other as a gift."

"Lubricating The Motor" and Sample No. 120-Q on request.

JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.



Salesman's Page



ABOUT DIXON'S NEW PENCIL GUIDE

Few people need to know all about pencils, but everybody ought to know something about them.

What pencil for example is made and intended for the kind of work they do with a pencil.

It must be suited to the paper and adapted to its work to give the utmost satisfaction; to make the selection of such a pencil easy for everybody, the Dixon Company publishes a sixteen page booklet for general distribution which, while it does not describe in detail the various styles and qualities we manufacture, yet will be found remarkably helpful in bringing together the right pencil and the satisfied user.

With reference, for instance, to the pencils with copying lead—"the ink-wells that never need replenishing," they sign checks same as ink, write prescriptions, nurses' memorandums, "all the functions of ink, but none of the bad features."

We wonder why every professional and business man does not use them regularly.

Why should not a pencil user be satisfied with the carefully graded and beautifully finished Anglo-Saxon, with its gold tip and fine eraser, or the perfect AMERICAN GRAPHITE in round or hexagon shapes, or the Eldorado for high class work, or the Cabinet with tip and rubber, always popular for general office work.

We certainly can supply everybody with just what suits, if we can only get the opportunity to recommend our particular production.

Dixon's New Pencil Guide has already afforded pencil comfort to hundreds of dissatisfied pencil users.

LINSEED OIL

Impure linseed oil used in paint which is said to contain only pure, boiled linseed oil, will, under the new laws enforcing the bringing of goods up to the standard of label and advertisement, surely get the dealer and manufacturer in trouble with government and state inspectors.

We read in a Pennsylvania newspaper that a crusade in that state is now going on against the hardware men who are selling adulterated linseed oil paints. A number of arrests have already been made and other arrests are expected to be made of persons who are selling oils that are not up to the standard required by the laws of the state.

Dixon's Silica-Graphite Paint contains only pure, boiled linseed oil as the vehicle, and this most important requirement we have faithfully lived up to for nearly fifty years. This is why Dixon's metal protective paint is the standard among railroads and other large users who must have the *best*, because, *lasting longer* on the job, it is more economical, saving in labor and material.

Teach your dealers to get their customers on this intelligent and popular basis. Dixon's Silica-Graphite Paint is the greatest economy paint and metal protector; and dealers

who carry it in stock will have no trouble with the government or state inspectors.

A NEW CRAYON FOR DRAWING TEACHERS

A new use has been recently discovered for Dixon's Lumber Crayons in connection with school work. In the past these crayons had been thought to be too large and awkward for easy handling.

Dr. James Parton Haney, Supervisor of Drawing and Art in the High Schools of New York City, asked our School Department if they could get him up something that was not only very large but very soft. We experimented on these lines and furnished him with samples of the shape and style of our lumber crayon, $4\frac{1}{2}$ inches long and $\frac{1}{2}$ inch in diameter, made several degrees softer than our softest crayon that had been made in the past.

Dr. Haney wanted these particular crayons made in this way so that he could demonstrate on large sheets of manila paper to an audience of several hundred people, the way pencil drawings should be made in order to illustrate certain things. If he had used an ordinary lead pencil the drawings would not have been visible at a distance or to a large body of spectators, but the use of this soft crayon gave the effect of pencil work even to those in the rear of the hall.

The size of the crayon enabled him to give those broad, flat strokes which are so much in vogue by teachers of drawing at the present time.

The Dixon Company are now trying to make a crayon which will be even softer than the ones Dr. Haney used in his address and illustrated lecture. The point to be obtained is to combine extreme softness with strength and durability, so that the crayon will not crumble like a piece of chalk but retain its original form while in use.

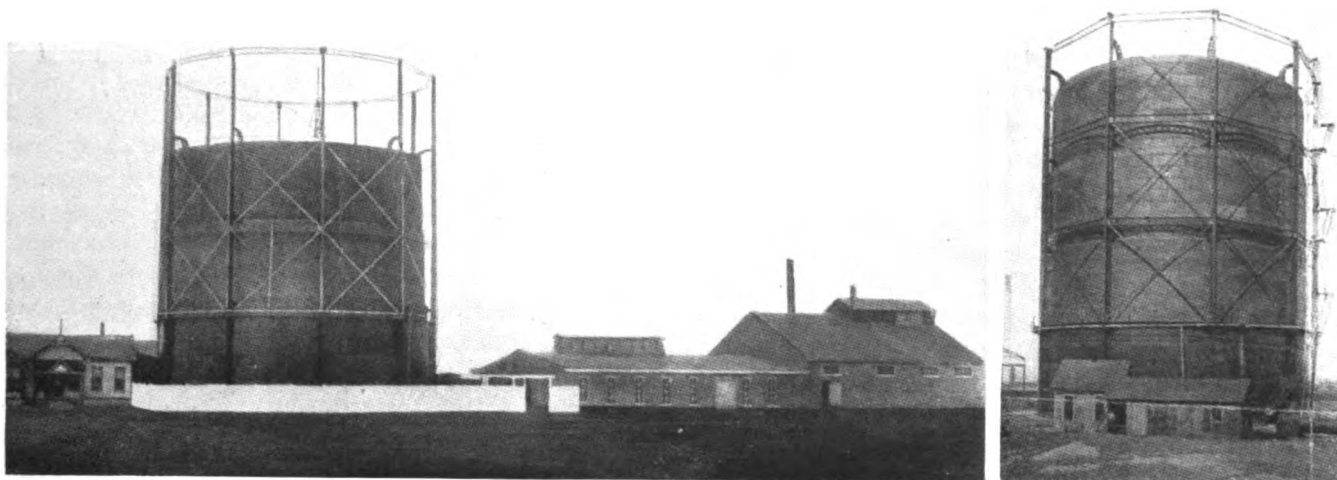
We think this crayon would be appreciated by teachers of drawing when demonstrating to a class and would be much more sanitary than chalk on a black board, as it is entirely free from dust and the sheets of brown paper could be renewed as fast as desired. Then as each drawing is made on a separate piece of paper there is an opportunity of preserving the work and handling it around to be criticized and shown to others. It is barely possible that the future blackboard in the school room may turn out to be not a blackboard at all, but some arrangement of large sheets of paper such as was used by Dr. Haney at the meeting of the art teachers in Baltimore.

C. H. BIGELOW

Writes: "After my experience with Dixon's No. 677 as a transmission compound, I put in my differential and have been very much pleased with the result."

"Lubricating The Motor" and
Sample No. 190-G on request.
JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.





A TALE OF TWO CITIES AND THE CENTRAL INDIANA GAS COMPANY

The cities of Muncie and Marion, Ind., obtained birth just about the time Joseph Dixon began the manufacture of graphite products.

This of course was in 1827, and for over half a century these two towns slept in a serene rural atmosphere.

In 1887 natural gas was discovered in and about Muncie and Marion and almost over night these two quiet places were thrust into the limelight of a nation's amazement.

Men rushed frantically about, seeking opportunities to become millionaires in a day by sucking the gaseous wealth of Mother Earth through iron straws. Real estate values doubled and trebled between sun-up and sun-down; railroads raced to reach these cities of marvelous growth and—

The needles of the pressure guages quivered the warning; the roar of free gas softened to a whisper and so far as concerned industrial purposes, natural gas became the subject of an oft told tale.

To follow historical precedent, Muncie and Marion should have retired to peaceful oblivion or at least semi-obscurity. But these two cities were now extraordinary railroad and agricultural cities as well as centers of population. And strong, red blooded men refused to allow Muncie and Marion to sink back to a "has-been" existence.

Artificial gas is now supplied to the people of Muncie, Marion and many surrounding cities and towns by the Central Indiana Gas Company. At each of these two cities the company has erected a large central plant, sufficient in capacity to meet the utmost demands. These two plants are connected by an eight-inch pipe line 36.55 miles in length, and thus each city becomes a reserve station for the other.

Muncie and Marion and the numerous small surrounding towns may count themselves fortunate, indeed, when their supply of natural gas having failed they found a splendid organization of men whose faith, enterprise and capital have undertaken a project of such vast and permanent benefit to the community.

Our illustrations show, on the left, the gas holder and plant at Marion and on the right the gas holder at the Muncie plant. Both holders are of 500,000 cubic feet capacity and, like many other well cared for holders, are protected with Dixon's Silica-Graphite Paint.

The Dixon booklet, "Gas Holder Painting," illustrates some notable structures, among which is the largest gas holder

in the world. A copy of this interesting booklet will be mailed upon request, and if interested in gas holder painting you will do well to write for it now.

REMOVING A JENKINS' DISK

One of the mechanical papers which comes to my address, tells us that it is a good idea when we are about to remove a disk from a Jenkins valve, to heat it in a gas jet in order to soften it until it can be removed easily. This is all right provided you have neglected to put it in properly in the first place, but my plan is to coat the inside of the disk holder with Dixon's Graphite mixed with cylinder oil, consequently when I wish to remove this disk it is only necessary to unscrew the nut and the disk turns easily with it and comes out of the holder without the slightest trouble. This is far better than allowing a disk to become firmly attached to the holder and then heating it in a gas jet, or in any other way when a new disk must be put in.—W. H. WAKEMAN.

SOOTABILITY OF PITTSBURGH

We read in one of the daily papers that Professor R. C. Benner of the University of Pittsburgh states that there are more than \$500,000 worth of laundry articles destroyed every year by smoke in Pittsburgh.

It was also stated that Professor Benner had taken from the lungs of a man who had lived for fifty years in Pittsburgh a quart of soot and that in a cubic mile of Pittsburgh atmosphere there are $4\frac{1}{2}$ pounds of soot. The life of lace curtains in other cities is one-third longer than in Pittsburgh. From twenty per cent to forty per cent of the dust in the city of Pittsburgh is composed of soot.

In Pittsburgh people wear plain, black soots, with stripes when it rains.



A. L. WESTGARD

The noted pathfinder writes that Dixon's Automobile Lubricants played an important part in his celebrated trip to the Pacific Coast.

"Lubricating The Motor" and

Sample No. 130-G on request.

JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.

THE USE OF GRAPHITE IN THE SUGAR FACTORY

(From the Louisiana Sugar Planter and Manufacturer.)

Among the sugar factory engine room conveniences whose utility has developed them into necessities, none rank higher as "first aids," as well as permanent aids, than graphite, which, in a comparatively short period of years, has transferred its stronghold from the foundry, where its value as a "core-wash" has held sway, to the engine room, and has shown itself equal to innumerable emergencies of the power plant as the article *par excellence* to smooth the somewhat rugged pathway of the power plant engineer, and has conquered a new territory completely without loss in the old. Perhaps in no power plant has it been more cordially welcomed, or filled a greater variety of useful purposes, than in the sugar factory.

While the individual uses of this wonderful fireproof, waterproof, weather-proof and acid-proof substance are legion, the two most conspicuous ones are lubrication and preservation, in both of which it stands without formidable rival and with popularity always on the increase as the ramifications of its virtues become better known.

As a lubricant, pure graphite is so near perfection that its use by sugar factory engineers is progressing in all directions in the field formerly held sacred to liquid lubricants, the steps of such progress being only marked off by the various methods devised for its application.

Two surfaces of pure graphite are less abrasive in action than those of any other substance, with the possible exception of ice, whose angle of friction is inapplicable industrially.

The fine character of the graphite particle and its easy reduction in service to an almost infinite degree of fineness, promotes the embedding of these fine particles into the always granular surface of even the most finely polished journals, making a fairly practical application of the theory of building up two graphite working surfaces. The value of the surfaces so formed for the reduction of friction and wear and the persistence with which they continue their good work make profitable many expedients and any reasonable amount of work to promote such condition of wearing surface.

Graphite first invaded the field of lubrication from its known anti-friction qualities, and the difficulties of application where such appeared have been chiefly overcome by mixing with liquid lubricants, in which way it may be "floated" into places where wanted.

This principle of mixing is practicable throughout the whole field of lubrication, mixed with oils in such proportions as will give a consistency suitable for the particular conditions. The high quality of the graphite as a lubricant, its freedom from flying off the surfaces of high speed machinery, and the ease with which the proportions can be controlled, make the most desirable thickness of the semi-liquid that which will just give sufficient mobility to the mass to enable it to reach the point wanted.

There are no lubricating oils whose value in a sugar factory, or, in fact, elsewhere, is not raised by the use of graphite as liberally as the circumstances will permit, and few situations which do not admit of some addition of so valued an ingredient, and with the mutual benefit of improving the oils by the graphite and of assisting the movement of the graphite with the oil.

For the numerous engines of the sugar factory, mill engines,

crusher, blower, centrifugal and others where the duty is hard and the steam not always of the best quality, graphite is invaluable, as well as in the air compressors used for blowing wells, sulphur furnaces and even through filter presses. Sugar house machinery is not always attended to by the best possible workmen on account of the short season and it is handicapped by the lack of that organization which exists in year round operated factories, and the best lubricants to be had must be used to get results, and in these establishments the use of graphite in the cylinders in its dry state has become a standby.

Introduced into these cylinders, either through the indicator pipes or through special connections which have been made, the use of dry graphite, fed as above, through special devices which have been designed, has been found to produce a finer condition of cylinder and piston polish than is possible with any other lubricant. When introduced into cylinders of the steam engine or through the suction connection of the air compressors, as well as into the cylinders of the multitude of pumps used in the sugar factory, it is found to give more immediate relief from laborious working conditions than anything else that has been found. The chief secret of this excellent performance is found in the fact that in its finely divided state it is carried into the remotest recesses of rings and pistons, which are almost inaccessible to oils. And such portions of the graphite as are found deposited among piston rings of the steam or air cylinder are the best possible preservative against rust. Then again, the valves of the air compressors where graphite is used are found to wear better and to receive a very valuable preservative and lubricating covering.

Taken as a lubricant, weight for weight, for comparison, its value is unapproached and its use with other lubricants is wholly a matter of securing a vehicle for its application. In all our sugar factory operations where we want the packing to last the day and night season, equal to about six months daily operation, the custom of using any packing of any kind (except that which wise packing-makers prepare in the making with graphite) without a coating of graphite is fast disappearing and generally represents someone's laziness instead of lack of knowledge of its benefits, because its wonderful lubricating value on packing as well as its preservative value is as high, and, if possible, more apparent, than elsewhere.

The lubrication of packings, where we have so many engines and pumps as in the sugar factories, is an item of great importance and engineers are learning that about the only kind of lubrication that will "stay put" is graphite.

In our heavy sugar mill work, where the journal pressures sometimes reach from twelve to fourteen hundred pounds per square inch of journal surface, graphite is steadily growing in favor and great relief from warm journals is often experienced from rubbing the exposed sides of the open journals with dry graphite to build up a new and frictionless surface.

In our sugar factories there has been developed a considerable use of "cup" grease, especially on all the small journals about the engines and pumps where not exposed to high temperatures, on vacuum pumps, blowers, electric light machines, centrifugals and others, where the smear of oil has become a nuisance. "Cup" grease, mixed with graphite (as thick as it will work), is found to work wonders in improved lubrication. Perhaps in no other combination in sugar house

work is graphite more perfectly serviceable, as the grease is an ideal vehicle, the whole forming a very desirable combination free from the most distressing as well as wasteful feature of liquid lubricants, that of being thrown off the machinery while in motion and running to the floor while at rest.

As a preservative against rust, graphite, when properly applied, stands without a peer and there is perhaps no factory where this enemy is so active as in the sugar factory, where the acidity of the sulphur fumes used in one section of the sugar process is apt to permeate every portion of the factory. In addition to these the acid juices attack iron at every turn.

Rust, around the tail pipes of vacuum pans, clarifiers, brush pans and the small piping about juice, syrup and molasses tanks, makes such piping short lived, except where properly treated with some protective covering, and nothing resists decay like an acid-proof substance, such as graphite. These pipes should have an outside coating of graphite and boiled linseed oil, the threads, when put together, the same, and as far inside at the ends as may be reached with the same coating; these latter portions are the first and worst sufferers, and there is no effort at preservation about the sugar factory which will give equal returns for the cost.

In the multitude of piping, for steam, hot and cold water, hot and cold juices and syrups, molasses, scums, acid fumes, etc., with which the sugar factory is so liberally equipped, it is becoming customary that every bolt, pipe-thread and every flange joint shall be covered with a protective coating of graphite where the preservative effect is one of the two great benefits; the other, every joint made up with graphite will separate without destruction when wanted. Bolts will handle easily and may be made to outlast their machines except by breakage.

Graphite for these various uses is on the increase in proportion as education regarding its use progresses until at this time one cannot enter a sugar factory, either in Louisiana or the tropics, without encountering the familiar graphite can, as a chief among its accessories, but this victory will not be complete until every bolt, pipe-thread and every joint in all these factories is covered, each time separated, with graphite. Decay in the sugar factory must be arrested, and no single instrument is so effective or has so many applications as graphite.

The protection of highly heated metallic surfaces is graphite's own field. We are all familiar with the "from time immemorial" stove polish cake which has monopolized its place through many years and has, in powdered form, gradually invaded every field where there are heated metallic surfaces to protect.

In our sugar factories there are many situations where its use in this direction is considered a necessity. There are hundreds of locomotives on our cane-field railroads and the number is increasing. In these locomotives we must have graphite for the "smoke boxes," and the graphite can for the balance of the machine, the same as in stationary work.

Graphite has also usurped the field formerly occupied by our old friend red lead on pipe fitting work and is put up in many forms for various uses, and the sugar factory owner and especially his engineer, who does not strive to keep pace with the manifold applications of this wonderful substance, is seriously standing in his own light.

LIGHT MADE AUDIBLE

Information comes to us from Europe of a seeming miracle. An apparatus has been invented whereby light is made audible.

The apparatus is contained in an oblong box, about twenty-six inches long and eight inches deep. The blind man held a box in one hand and in the other hand held a cardboard cylinder which acts as the "feeler" of the optophone, which is the name of the instrument. Moving the cardboard feeler slowly before him, he was able to tell by the sudden increase of sound in the telephone receiver held to his ear, with the tube pointing to the window, whether anyone stood between him and the window. Swinging the tube slowly round, he counted the persons before him.

A reporter who tried the optophone found that a glimpse out of the window sounded like a cinematograph reeling off a film. The ticking sank almost into silence as the receiving tube was held in the shadow of the table and leaped into a lively rattle when placed against an electric light bulb.

It is hoped that eventually the apparatus will be so improved that the operator may not only tell of objects near him, but might also spell out letters in fairly large print.

TETZLAFF WINS BIG RACES AT TACOMA



Teddy Tetzlaff once more demonstrated his marvelous speed at the wheel of a racing car, winning the two biggest events at the Tacoma Road Races, July 5-6th, and the Montmarathon Trophy.

Says *The Automobile*: "Teddy Tetzlaff, holder of the world's road record, was the star of the meet, driving his Fiat to victory in the heavy-car race the first day and annexing the free-for-all yesterday.

In the Friday race Tetzlaff averaged 68.66 miles per hour for 200 miles, while in the 250 mile free-for-all yesterday he averaged 65.8 miles per hour."

The free-for-all race was a battle royal between Tetzlaff and Bergdoll. Tetzlaff won the race on his merits. His good judgment concerning equipment again proved an invaluable aid to his success. It is with a great deal of satisfaction that, in connection with Teddy Tetzlaff's victory, we can record a most unusual performance of Dixon's Automobile Lubricants.

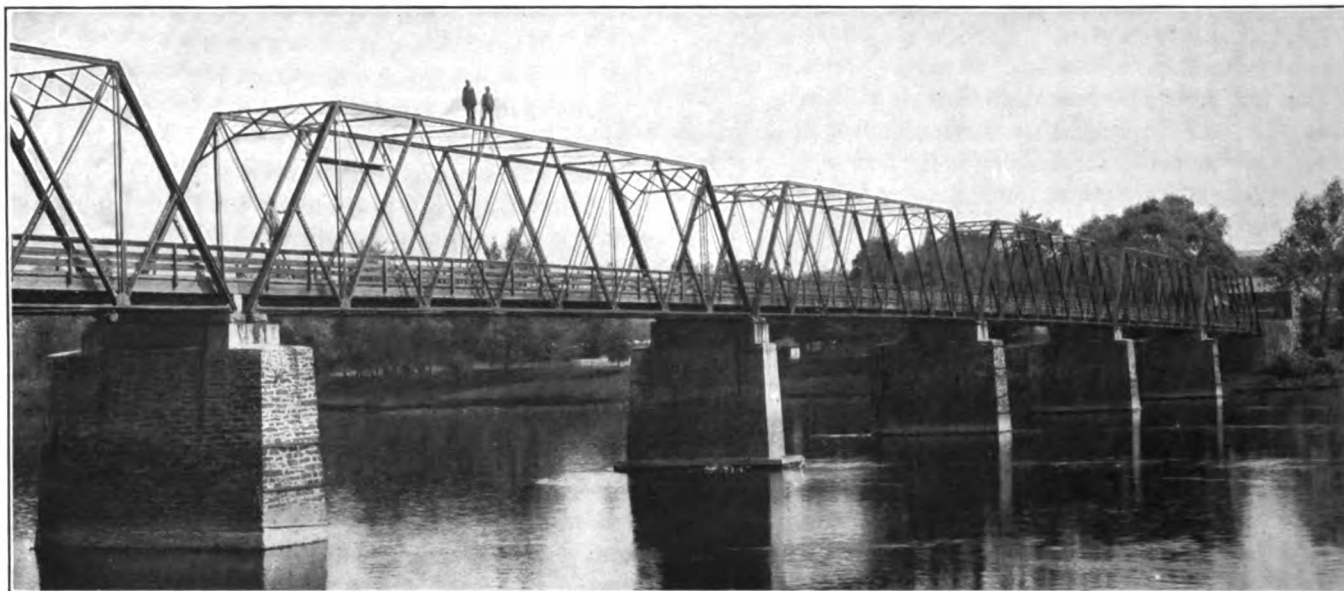
That our pleasure is shared by Tetzlaff himself is evidenced by the following enthusiastic lettergram from Portland, Ore.

"Without change or addition of Dixon's Graphite Greases the car that won at Santa Monica won at Tacoma. Without addition or subtraction of Dixon Greases, the car that ran second at Indianapolis won the heavy-car race at Tacoma. All hail to Dixon's Graphite and again I compliment you for manufacturing such wonderful goods."

TEDDY TETZLAFF.

The lettergram tells a story that needs no verbal embellishment, though it should be explained for those who may have forgotten that the Santa Monica Road Races occurred on May 4th and the International Sweepstakes Race on May 30th.

Dixon's Automobile Lubricants have found favor and have steadily grown in popularity with automobile racing drivers.



**DELAWARE RIVER BRIDGE, WASHINGTON
CROSSING, N. J.**

This splendid bridge was last painted in 1908 with Dixon's Silica-Graphite Paint. It has not been repainted since then and is in excellent condition. This is only one of the hundreds of long service records of Dixon's Silica-Graphite Paint showing it to be the most economical protector for steel work, as it *lasts longer* than other paints. Please remember that we manufacture in *one grade* only, and therefore have none cheaper in price or quality. Our answer to the other fellow's argument about cheaper prices is our longer service records. Write us for same. Efficiency always wins out in the end.

FROM AN OLD FRIEND



Mr. W. H. Wakeman, the well known author and expert engineer, is an enthusiastic advocate of flake graphite lubrication and elsewhere in this number of GRAPHITE he relates of one of his many uses for Dixon's Flake Graphite. We are glad to learn that he also takes kindly to Dixon's American Graphite Pencils.

NEW HAVEN, CONN., June 21, 1912.

Joseph Dixon Crucible Company,

Jersey City, N. J.

DEAR SIRs:—The box of pencils mentioned in your letter of recent date came to hand today, and I thank you very much for the same. I have always taken pride in nice lead pencils and these are sufficient to sustain the failing for a long time to come.

Please accept my thanks for them and be assured that I appreciate the same.

Very truly yours,
(Signed) W. H. WAKEMAN.

Many of our readers will remember that Mr. Wakeman wrote many articles for GRAPHITE and that they were not only enjoyed for their pleasing style, but also for their accuracy and helpfulness.

"WAITING FOR THE GODS"

May 23rd, 1912.

*Joseph Dixon Crucible Company,
Jersey City, N. J.*

DEAR SIR:—I give your an order as Some time ago and i am still waiting. For the Gods i thank your for reply if you will ship the order Or not i beg to remain,
Very truly yours,

MAN NEEDS but little here below—but the engineer cannot safely omit Dixon's Flake Graphite.

Better Than Ink

Vacation post cards are ever welcome to those at home.

They recall happy days spent among mountains, in the country or at the seashore.

Write to your friends with a Dixon's Endurance, the indelible pencil. Take this pencil with you and neither hotel pens nor borrowed ink will spoil your time, temper, hands or clothes. It preserves like ink, but is cleanly and convenient.

Be sure to ask your dealer for a Dixon's Endurance.

The

Evidence



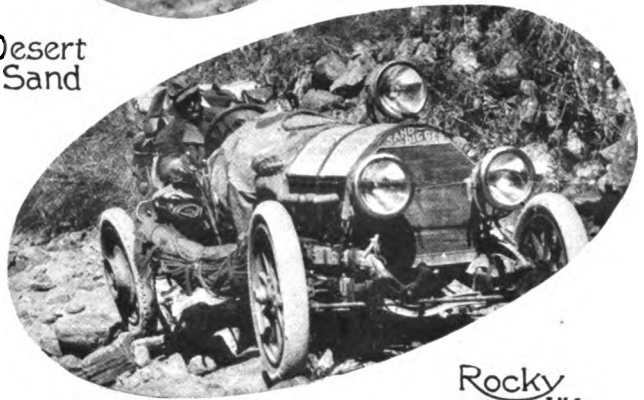
Bridgeless Rivers,
Water Holes



Swamp Land
Desert Sand



Mud and
Quicksand.



Rocky
Ways

HOW THE TRIP OF THE "SAND DIGGER" PROVED SOME LUBRICATING FACTS

The Cadillac "Sand Digger" is the first automobile to pierce the almost unknown wilds of the western coast of Mexico. Under the auspices of the Pacific Highway Association and the *Los Angeles Examiner*, T. J. Beaudet, the driver of the "Sand Digger," accompanied by Chester Lawrence, Automobile Editor of the *Examiner*, battled for almost two months between Los Angeles and Mexico City. Though the distance is recorded as 2,560 miles, the "Sand Digger" was obliged to travel over 3,347.

Of his trip Mr. Beaudet writes: "I surely appreciate the qualities of Dixon's Graphite Automobile Lubricants, which I used throughout the car. We traveled through country almost impassable, fording in all thirty-two rivers. At times the wheels and chassis remained submerged in the rivers from eight to twelve hours and it was often necessary to drain the water from the transmission and differential gears. After examining the car upon its return to Los Angeles, we found every bearing and gear perfect, apparently the original amount of grease remaining in the wheel spindles and transmission,

also differential—the life and lubricating quality intact. I am now about to start through California without renewing the original grease, for so far as I can see, it is as good as ever."

A glance at the accompanying illustrations will prove the trying conditions under which Dixon's Graphite Automobile Lubricants gave such splendid service. We have often said that graphite is unaffected by heat, cold, acid or alkalies, but we have seldom had so pleasing an opportunity to furnish such convincing evidence of what we know to be facts.

Dixon's Graphite Automobile Lubricants are sold by all first class dealers. Samples upon request if you mention name of your car.



LOUIS F. NIKRENT

A Santa Monica winner, writes: "It is my intention to use Dixon's Graphite Automobile Lubricants in all my future races."

"Lubricating The Motor" and
Sample No. 1591-G on request.
JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.



**ALEXANDRIA HOTEL ADDITION,
LOS ANGELES, CAL.**

Significant of the progressive spirit of Los Angeles is its constant expansion and improvement in building construction. A recent and notable example is the addition to the Alexandria Hotel, designed by Parkinson & Bergstrom, architects. The addition, as may be seen by the accompanying illustration, is fourteen stories high. It contains about 2,000 tons of steel work, fabricated at the Ambridge plant of the American Bridge Company, and protected with Dixon's Silica-Graphite Paint, Dark Red. The Baker Iron Works served as general contractors.

HISTORY REPEATS ITSELF

It is said that history repeats itself. We know that many things swing around in a circle and after a time come back to a starting point. Each year the small boy, wherever he may be, brings out his top and his kite at the regulation time.

In mechanical things it is much the same way, and just now we are receiving letters with inquiries about the use of graphite in boilers. We note articles in the papers and are told of advertisements making a special feature of graphite for breaking down old scale and for making boiler cleaning easy.

The use of graphite for this purpose is not at all new. Years ago, in fact many years ago, amorphous graphite was used. Later on flake graphite was employed with greatly improved results.

In GRAPHITE for June, 1904, mention is made of a German patent covering a mixture of train oil, horse tallow, mineral oil and zinc white, mixed with a portion of graphite and lamp-

black, water and some carbolic acid being added until a paintlike consistency is obtained. This mixture is introduced into the boiler and the claim made was that it prevented scale, although if any boiler scale was formed it could be easily detached by simply tapping with a wooden mallet.

In August, 1904, we published another article on graphite for boilers, wherein it was shown that where graphite was used only very thin and even scale was formed and the engineer who had the boilers in charge claimed that it came off the tubes with very little jarring.

In January, 1905, we again published an article on graphite in boilers, in which we quoted from a paper read before the Institute of Naval Architects of England. We quote a part of that article: "Flake graphite does not choke or clog exhaust pipes and may be readily removed by any good form of extractor or separator. Flake graphite will soon settle out of the feed-water in a hot well and will not pass through a filter. Flake graphite need not be kept out of boilers and condensers, for it is an excellent conductor of heat and most efficient in preventing the formation of tenacious layers of scale. In fact, graphite is coming to be used more and more, not only for coating the interior of boilers to prevent corrosion, pitting and sticking of scale, but we have good authority for the statement that Dixon's Ticonderoga Flake Graphite is an efficient scale softener and remover."

"An engineer recently recounted how every two weeks he introduced a half pound or so of this graphite into his boilers and stated that it actually seemed to penetrate the layers of scale, causing them to become crumbly, so that they would drop off when the shell and tubes were lightly tapped with a hammer. He stated that he found that the graphite had actually worked its way into the scale."

In GRAPHITE for February, 1905, we printed an article from the *National Provisioner* from which we quote: "We find that graphite is as useful in its way for the interior of boilers as it is in the form of graphite paint for exterior of boilers, such as boiler fronts, valves, pipes and iron work used in boiler setting. We paint the inside of our boilers to prevent scaling and know of other people who do the same."

In GRAPHITE for October, 1906, we quoted an article from *The Threshermen's Review*, written by Mr. O. V. Foster of New Middletown, Indiana. Mr. Foster said among other things: "I found this out by accident. I thought by putting flake graphite in my tank pump it would work much better. I placed the graphite in the tank pump which lubricates tank pump valves and crosshead pump valves and cut the scale from the boiler."

In GRAPHITE for July, 1907, we published the following: "Coating the inside of boiler tubes with a thin layer of graphite, says *The Electric Railway Review*, has given excellent results in a boiler plant using water containing excessive amounts of scale-forming salts. These deposits have required frequent drilling of the tubes. It was found by experience that much less scale adhered to the tubes coated with graphite and that the scale which did form was far more easily removed from them than from uncoated tubes.

"The application of graphite might be said to have insulated the steel from deposit and thus rendered the tubes more easily cleaned; and when cleaned their interiors appeared perfectly smooth, without the usual patches of scale remaining as is the

case after a tube has been bored with a turbine-cleaner. The one application of graphite so adhered to the metal that the interior of the tube had the appearance of a gun barrel, the graphite coat remaining intact after several cleanings. The graphite may be prepared for application to the interior of tubes by mixing it with pure mineral oil in an amount sufficient to form a thick paste, or it may be applied dry."

The thin flakes of Dixon's Ticonderoga Graphite have a strong mechanical affinity for metal surfaces. They become firmly attached, and, therefore, as the writer above mentions, completely insulate the tubes from a scale-forming material.

In GRAPHITE for March, 1908, we had the following from the *American Journal of Steam and Electrical Engineering*: "Graphite in a boiler is an advantage rather than a detriment. If the feed water contains scale forming salts, the graphite will combine with the scale to make it softer and more easily crumbled. Graphite is absolutely inert and, though it is a form of carbon, no electrolytic action has ever been traced to the presence of graphite. It is an excellent conductor of heat and its presence on the boiler sheets offers no increased resistance to the transfer of heat.

"When graphite is rubbed upon boiler plates and tubes, as is sometimes done when cleaning and overhauling them, not only will the scale not adhere closely, but pitting, grooving and other forms of corrosion cannot occur."

In the same issue of GRAPHITE we published an article by a Chicago engineer who speaks very favorably of graphite for boiler use and boils it down in the following sentence: "The graphite settles little by little down to the bottom of the boiler or the flues or flue sheet, or locates where scale will settle, thus preventing scale."

In GRAPHITE for May, 1908, we published another article on the subject of graphite as a boiler scale preventive. The sum of it was that it is better to have the boiler clean to start with, as graphite is a better preventive than a cure of scale. The philosophy of it seems to lie in the ease with which flake graphite will attach itself to all the minute irregularities of the inner surface of the boiler, giving it a coating which has no effect whatever on the metal, although it is a good conductor of heat. Scale will not adhere to the graphite, as it does to the bare metal, and what does collect has been found to be much softer and easy of removal. Many authorities claim that the best practice for introducing flake graphite is to mix it to a paste with kerosene oil, place it in the bottom of the boiler and turn the water in, when the graphite will be deposited where wanted.

We have from time to time published in GRAPHITE other articles relative to graphite as a lubricant and wherein mention was made of the use of flake graphite for a prevention of scales. As very much of the amorphous graphite has clay associated with it to quite a large extent, and as a clay is liable to form with the graphite into balls, it has been found by practical engineers that Dixon's Thin Flake Ticonderoga Graphite is by all odds the best form of graphite possible for lubricating and for the prevention of hard scale and to prevent scale from attaching itself to the surface of the boiler.

As above stated, the thin flakes of graphite become firmly attached to the irregularities of the metal surfaces, forming after a time a veneer-like coating of graphite, to which it is impossible for scale to become attached.



DIXON PENCIL DISPLAY ARCADE OF N. C. R. CO.

Dayton, O., is the home of flying machines and cash registers. It would be difficult to determine which of these two great inventions contributed more to Dayton's fame.

Wilbur Wright has passed away and his name will remain a monument to American invention. Less spectacular is the invention of the cash register and possibly the name of its inventor, Jacob Ritty, will only be remembered as a monument to Yankee ingenuity.

John H. Patterson is the moving spirit of the National Cash Register Company. He has reduced the advertising and selling plans of the company to a science and today no other organization of salesmen in the world is so well trained as is that of the National Cash Register Company.

Out in Dayton, O., a ten story office building serves as the home of the National Cash Register Company. Even the plans of this building were subjected to advertising as well as architectural thought and as a result, a beautiful arcade permits the forty thousand or more visitors, many of whom are possible purchasers to see the product of the National Cash Register Company under natural, or retail, surroundings.

The arcade is a window display, raised to the 'nth degree of salesmanship. In it the grocer, the butcher, the stationer and other retail merchants can see themselves as the National Cash Register Company thinks they should be seen.

The Dixon Company recently accepted an invitation to occupy the book and stationery window of the National Cash Register Arcade and the accompanying illustration shows an arrangement of Dixon's American Graphite Pencils made by the Window Advertising Department of the National Cash Register Company, under the supervision of Mr. S. B. Van Horn. Cash registers are a necessity to stationers who handle Dixon's American Graphite Pencils. "There's a reason."

HARRIS M. HANSHUE

Writes: "Lubrication is simply perfect. I can hardly express myself as to the satisfaction obtained from the use of Dixon's Automobile Lubricants."

"Lubricating The Motor" and
Sample No. 100-G on request.

JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.





Dixon's Pencils for Your Bookkeeper

The difference in cost between ordinary lead pencils and Dixon's Pencils is *small*. The difference in quality is *great*. Your bookkeeper ought to have them for his ledger totals because they mark firmly and legibly without smudge. But the mark comes off *easily* by erasure.

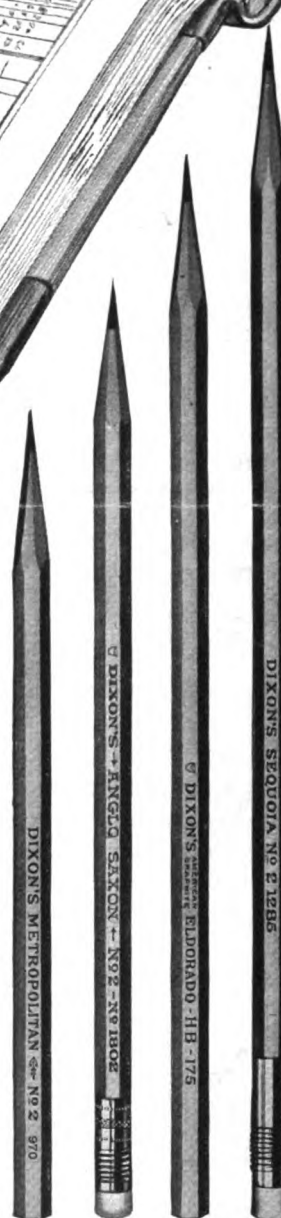
DIXON'S AMERICAN GRAPHITE PENCILS

are made from American material, by American workmen, for American users; and made *good*. Easily sharpened because the cedar cases are straight grained and without knots. The graphite "leads" are sturdy, smooth, reliable. Many kinds of Dixon Pencils at all prices, for *all* uses.

Send now for Dixon's Guide for Pencil Users. Tells the proper pencil for any purpose. Mailed free.

The drawing for the illustration above was made with a Dixon Pencil.

JOSEPH DIXON CRUCIBLE CO.,
JERSEY CITY, NEW JERSEY.



GRAPHITE

VOL. XIV.

SEPTEMBER, 1912.

No. 9.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

SORE FEET AND FRICTION

We are told by those who make a study of the matter that the foot is the key to the well-being of humanity. You can't do much for a man in the way of religion if he is suffering from bunions. No one can be really happy with a bad corn. All of your reformers, poets, comedians, spellbinders and editorial writers can do little for a people who have to do a certain amount of walking each day on feet that are swollen and sore. A business man to succeed must have good feet.

The same may be said of any piece of machinery. The engineer of a 20th century flyer cannot make time or keep his temper if his engine does not run smoothly, or if a hot-box develops anywhere on the train. The most skillful engineer, the best quality of steaming

coal, all fail if the parts of the great engine do not run with absolute smoothness.

The engineers of the great railroads and the engineers of the great steam plants have long ago subscribed to the indispensability of Dixon's Flake Graphite.

The drivers of the racing automobile have been somewhat slow to understand why they should make use of a solid lubricant like Dixon's Flake Graphite, but 85% of all the racers at Indianapolis used Dixon's Flake Graphite and the world's records went by the board.

All forms of graphite may be considered as lubricants, but it is only the very thin flakes of Dixon's Ticonderoga Graphite that may be considered the ideal graphite lubricant.

"There's a reason." The thin flakes of graphite build up the microscopical irregularities of the bearing, forming a veneer-like coating of marvelous smoothness and endurance. It is because of this finishing of the bearings that the oils and greases used are able to do their best work. In other words, to perform their proper function.

If you were to go into a printery where they turn out especially fine work you would see the pressman using the thinnest possible pieces of tissue paper with which to build up the form. Only an inexperienced pressman would think of using thicker paper. Building up the form with the pieces of thin tissue paper eventually brings out a perfect print. Every part of the page is equally inked. So it is with the thin flakes of graphite. They build up the bearing throughout so evenly

that every part touches and the oil or grease used, as we have said above, can perform its proper function.

FLAKE GRAPHITE LUBRICATION TESTS

As a safeguard against the serious effects of failure of the lubrication supply consistent use of graphite frequently has been recommended. In reporting the results of experiments made to determine its lubricating value, one authority has stated that "the tests show that with no other lubrication than flake graphite the journal and brass may be run together for hours at a time, heating up to a high temperature, and this may be done repeatedly, and yet the rubbing surfaces of the bearings remain unscored." Unlike the oils, graphite possesses a peculiar affinity for metallic surfaces and by knitting over them a tough, thin and highly unctuous covering, serves to keep the surfaces apart, even when heated to high temperatures. It is this property which renders it useful as a lubricating standby.—*Automobile Topics*.

A PAINT-EATING FUNGUS IN GREENHOUSES

Fungi are the enemies of horticulturalists and arboriculturalists, but here's a new one which attacks paint in greenhouses. The annual bulletin of the famous Kew Gardens of London reports as follows:

"A paint-eating fungus is also causing great disaster in the English greenhouses. The fungus, *Phoma pegmentivora*, sets itself up in freshly painted hot houses, and flourishes in damp and in high temperatures. Small rose-colored specks are seen on the paint about a month after the painter has finished his work. They spread to dark spots like sprinkled blood. The paint is ruined through the fungus' destructiveness."

The pigment of Dixon's Silica-Graphite Paint is absolutely inert and discourages corrosive and other attack. It is the best known protector of metal or wood surfaces for that matter, and it *lasts longer* than any other protective paint.

Moreover, Dixon's Silica-Graphite Paint has absolutely no injurious effect upon the flowers. The paint contains no lead or other poisonous ingredient in the pigment, and it has been extensively used in greenhouses for protection of piping, etc., with remarkable success.

Write us for records.

THE *Milwaukee Sentinel* says hot weather grows corn; corn produces whiskey; whiskey makes highballs and highballs make us forget the hot weather.



ESTABLISHED 1827.



INCORPORATED 1868.



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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BUFFALO OFFICE, 72 Erie County Savings Bank Building.
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Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

MORE ABOUT GRAPHITE AS A PREVENTATIVE OF SCALE AND CORROSION IN BOILERS

The question has occurred to me, why do so many of the brother engineers still persist in using strong chemicals to prevent internal corrosion and for the removal of scale from boilers? I have had a great deal of experience on land and at sea, and have found that chemicals that are strong enough to loosen and dissolve old scale will also attack the boiler itself. They will eat the flange packings in your steam line, destroy the piston rod packing and sometimes affect the rod itself. Now I had an experience some years ago which taught me a lesson. It taught me that there was a cheaper and more efficient way of removing scale and preventing same from forming than the use of strong chemicals.

We had just finished cleaning boilers after a lay-off of several weeks. I sent one of the firemen up over the tops of the boilers to get a small bag of graphite. He let the bag drop on top of one of the boilers, spilling about half of the contents of the bag, or about twenty to twenty-five pounds, down through the manhole and into the boiler. I thought at the time that it could not hurt anything, so I did not bother to clean it out, but forgot the incident and did not think of it again until I had it brought to my mind four or five months later, when we opened up the boilers for cleaning again.

I went through two of the boilers and found them in about the same shape as before. In between some of the tubes the scale had formed in a solid mass. On the shell and crown sheets there was from $\frac{1}{8}$ to $\frac{1}{2}$ inch hard scale. I put a couple of men in each boiler to scale and clean them, and I went on to the next boiler. You can imagine my surprise when I went into No. 3 boiler (on the same battery, using water from the same source) to find it almost entirely free from scale. What had settled in the bottom was soft and could be crushed in your hand. Most of it could be washed out with a hose. I did not know what to make of conditions as I found them until I came out with a handful of sediment I had gathered up as I came out. Upon examining this I found it was mixed with graphite, and then I remembered the incident when the graphite was spilled in the boiler.

I have used graphite ever since as a preventative of internal corrosion and to prevent the forming of scale. The graphite I have used has left the boilers clean and does not impair the boiler, packing or engines. No more chemicals for mine. A boiler graphite that protects boilers, engines, etc., is good enough for me.

—W. V. FORD in *International Marine Engineering*.

STOVE POLISH FOR EXHAUST PIPES

J. W. Fries, of Middleboro, Mass., writes as follows to *Power*: "After experimenting with all kinds of heat-resisting paints for our gas engine exhaust pipes, I happened to think of a stove polish. I argued that if it would stay on a hot stove, it would on the exhaust pipes, and after a trial I was convinced I had found relief from an eyesore to the plant.

"We have about fifty feet of exhaust piping above the floor, and the burnt aspect detracted from the otherwise cleanly appearance of the plant. Anyone who has failed to keep paint on hot pipes or other surfaces will find stove polish the solution of the problem."

OUR Boston branch advises us that they have received an unsolicited communication from a grammar school principal in New England who writes:

"I think a copy of 'Joseph Dixon' should be in the hands of every grammar and high school pupil. The reading and study of such a fine character would be more helpful than some of the wishy-washy reading of the day, and prove an incentive and inspiration for some embryos to become future 'world makers'."

The publication referred to is "Joseph Dixon, one of the World Makers" by Elbert Hubbard. We should be very glad to send copy of same to anyone who may be interested in reading of this kind.



Salesman's Page



SPECIALIZATION

We recently noticed in an educational paper, under the heading, "Near Right English," the following from a doctor's sign in a Western city:

SPECIALIST—ALL DISEASES

This would indicate that this particular doctor was well equipped to handle any case that might come his way, but it seems to us, as far as our business is handled, that there are very few men who can do all things equally well. Specialization is coming more and more to the front, not only along scientific lines, but in the commercial world as well. This was brought to our mind a few days ago on taking a prominent business man through the Dixon Pencil Factory. At the conclusion of his trip he said that what impressed him most was that each machine was doing only one particular thing, but was doing that particular thing well; so it is with our salesmen. There are very few, if any, in the Dixon employ, who can sell *all* things equally well. The salesmen who sell grease and lubricants would not be apt to succeed as well if they were asked to sell school crayons to the kindergartens, nor the paint salesmen if asked to interview a number of teachers of art and manual training in regard to particular pencils in which they are interested. The day of the "Jack of all trades" is gone, and the man who succeeds best in his work is the man who makes a special study not only of the particular line of goods that he is selling, but of his customers as well. The salesman who has to call on six or eight different lines of customers would be apt to neglect the one who ordered the goods that amounted to the least, for the one who gave his orders for the large amounts. Where there is such a vast variety of products, as those made by the Dixon Company, ranging from crucibles to lubricants, paints, greases, motor brushes and fine art pencils, there must be a corresponding variety of salesmen, and when any question is asked which does not belong to that particular salesman's department, it can be instantly referred to some one who is a specialist along that particular line.

WANTED—SALESMEN

Go into any city in the country, talk to nearly every automobile dealer and the question on every lip is, Where can I get good salesmen?

The above is from an editorial in *The Automobile* and the editor goes on to say that one of the traveling representatives of a big car maker stated recently, after having made a trip of nearly all of its agencies, that the salesman was the weakest link in the chain. In over seventy per cent of the cases the salesman did not know the elements of proper address to a customer when the latter entered the salesroom.

The Automobile deplores the scarcity of good salesmen in general; it adds:

"Salesmanship is a science, just the same as medicine is a science, just the same as astronomy is a science. Salesmanship is as imperative as is quality and the product that has to be sold. This is particularly so at present. The last five years have proved admirably the value of a knowledge of salesmanship. In that time many concerns have closed up their plants, bankrupts. They have not closed because of poor engineering; the engineers have taken places in the biggest and most successful plants in the land. The engineering work was satisfactory, so was the production; but the selling end was the weak link. It is just as important to know how to sell a commodity as it is to build it. It is questionable if there are not more engineers today than there are salesmen.

"One of the greatest essentials of salesmanship is to be a student of human nature, to have that ability to quickly and accurately pick out the stumbling blocks in the minds of the buyers. It is utterly impossible for the salesman to make a sale unless he is standing on the same level with the buyer. Until the salesman knows what points are dominating the mind of the buyer his efforts are futile; in fact, they are worse than futile—they are actually antagonizing the buyer.

"The salesman must be mentally acute, he must keep every faculty on the alert, for every word, for every syllable or for every symptom that may present itself. The only course to a sale is through the natural avenue of the buyer's mind. You cannot go contrary to that, you will antagonize, and buyer and seller will get farther asunder instead of coming together.

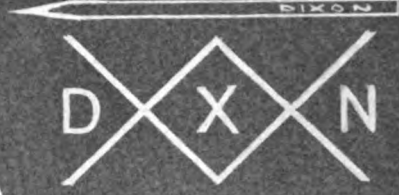
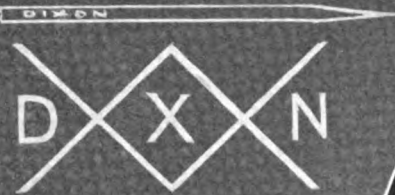
"It is this increased mental activity of the buyer that makes real salesmanship necessary today. Salesmanship is a mental study. The salesman must view it as such, must approach it as such, and must complete it as such."

PICKING GREEN APPLES

Advertising has been defined as a form of salesmanship. It is the "silent partner" of the salesman. It is constantly "on the job" in thousands of places where salesmen are unknown—in the home, at the club and wherever men find time to read. The salesman cannot travel as far and as wide as the advertisement and he cannot begin to make as many calls.

Advertising lubricates the path of the salesman. It educates prospective customers in a thousand and one ways—it stimulates curiosity and starts investigation—so that when the salesman calls much of his time, that would otherwise have to be spent in educative explanation, is saved. Advertising is the ripening force that selects, by producing inquiries, those who are ready to purchase. It saves time, money and effort. All Dixon salesman either consciously or unconsciously depend upon advertising influence to keep them from picking green apples.

DIXON's graphite publications sent free upon request.



J. H. VAN DERSLICE, MANAGER, 1909



WILLIAM BOWEN JR. 1911



CHAS. D. MCINTOSH 1908



ARTHUR KING 1912



H. T. GORRINGER 1908



W. D. WALKER 1910

ST. LOUIS
SALES FORCE
JOSEPH DIXON
CRUCIBLE COMPANY



THE ST. LOUIS DISTRICT SALES FORCE OF THE JOSEPH DIXON CRUCIBLE COMPANY

Skepticism is the happy medium between optimism and pessimism. Its course lies between these two human frailties. Missouri is the land of skepticism and its people are famed far and wide for their motto of "show me!" Missouri almost adopted the "Houn' Dawg" song and thus barely escaped the distinction of becoming the musical center of the United States.

St. Louis is the commercial metropolis and gateway of the great Southwest. Beyond it lies an empire rich in present activity and full of future promise. More and more has it claimed the attention of eastern enterprise.

It was an evidence of its belief in the future of the great Southwest that the Joseph Dixon Crucible Company in 1906 established its permanent headquarters for this vast territory at St. Louis. Its offices were located in the Victoria Building at Eighth and Locust Streets and have remained there ever since.

The St. Louis Branch is, geographically speaking, the second largest of the several offices of the Joseph Dixon Crucible Company. Its territory comprises the states of Missouri, Kansas, Colorado, Texas, Kentucky, Tennessee, Arkansas, Oklahoma and Louisiana. It also includes southern Illinois and Indiana.

Many of our "constant readers" may remember in the October, 1909, issue of GRAPHITE, the character delineation of Mr. H. A. Van Derslice by Messrs. Fowler & Wells, the noted phrenological experts. Many true deductions were made which have since been proven by Mr. Van Derslice himself. Mr. Van Derslice is both physically and mentally a well proportioned man. He is, as may be seen on the opposite page, in the prime of life.

Mr. Van Derslice was appointed manager of the St. Louis Branch on August 1st, 1909. Back of him at that time lay a successful business career which fitted him admirably for the work he has since accomplished as manager of the St. Louis office. Mr. Van Derslice started in the stationery business with the Western News Company in Chicago about 1883 or 1884, and from there went with a large and well known concern of the same city. Mr. Van Derslice remained with the latter company until its dissolution in 1893. (Mr. Van Derslice most emphatically denies that his connection with the company was in any way responsible for its demise.)

Mr. Van Derslice then became connected, first with the Geo. E. Marshall Company until 1895, and then with the Forman-Bassett-Hatch Company of Cleveland, both large and well known commercial stationery concerns of the West. Later Mr. Van Derslice joined the Smith-Brooks Printing Company of Denver, Colorado, where he remained until his connection with the Dixon Company.

Owing to the great mileage of the St. Louis territory, Mr. Van Derslice is compelled to have a sales force trained to sell the entire Dixon line. The salesmen who are working with Mr. Van Derslice are therefore men who are as intimately acquainted with the stationery trade as with the foundry, hardware, automobile and other trades to which graphite products are sold.

Mr. Chas. D. McIntosh sold graphite products before joining the Dixon sales force. Mr. McIntosh bears no relation to

the toffee king, though some jealous "knights of the grip" would accuse him of supplying a liberal quantity of that confection to the trade. Mr. McIntosh travels Kentucky and Tennessee, states in which certain unlawful persons are popularly supposed to conduct a flourishing business. We are positive, however, that Mr. McIntosh, though possibly interested in promoting the retail end of the business mentioned, is entirely disinterested in the manufacturing process. Mr. McIntosh also covers southern Illinois and Indiana.

Mr. H. T. Gorringer is commonly known as a factory product. Though many good things emanate from the Dixon factory and in one sense Mr. Gorringer should be proud of his title and associations, we believe that it would be altogether more appropriate to refer to him as one who had gained his knowledge and experience of graphite and its productions at the home of the graphite industry. Mr. Gorringer, as you may have guessed, claims Jersey City as his home town. He has many friends in Jersey City who were sorry to have him leave, though mindful of the better opportunities his newer connection offered. With the exception of part of St. Louis, Mr. Gorringer covers the states of Kansas, Missouri and Colorado.

Mr. W. D. Walker invariably suffers defeat at the hands of a photographer; otherwise he is successful. The photograph, reproduced on the opposite page, is a result of one of his many attempts to secure photographic justice. Mr. Walker, however, is philosophically inclined and fully realizes that as a business asset beauty possesses no cash value. Mr. Walker covers the northern part of the Lone Star State as well as Oklahoma and Arkansas.

Mr. Wm. Bowen, Jr., like Mr. Van Derslice, possessed the advantage of previous experience to aid him in his work for the Dixon Company. Mr. Bowen's former connections were with the B. P. Burnap Stationery and Printing Company and later with the Butler people as a traveling salesman through Iowa and Nebraska. Mr. Bowen's present territory with the Dixon Company is southern Texas and Louisiana.

Mr. Arthur King is the latest addition to the St. Louis sales force and unlike the others he is a specialty man. Mr. King is engaged in promoting the sales of Dixon's Automobile Lubricants. It would seem that Mr. Van Derslice could not have selected a man better equipped for this particular work, for Mr. King has been for ten or twelve years associated with the automobile industry and enjoys the reputation of being an authority on automobile lubrication. His experience and complete understanding of the construction of automobiles should prove of especial value to the St. Louis office.

Our readers who have never had occasion to meet any of our St. Louis boys, but nevertheless who are interested in each unit of the great Dixon sales force, may consider this an introduction to Mr. Van Derslice and the boys. It is sometimes difficult to overcome the inherent modesty of salesmen and Mr. Van Derslice deserves our thanks for inducing his sales force to gratify our interest.

DIXON's graphite publications sent free upon request.



WINNIPEG Y. M. C. A. BUILDINGS

Winnipeg is the "Gateway City" to Canada's magnificent agricultural country. It is a city that has grown from the work and dreams of young men—pioneers who sought and found homes in the great Canadian land of plenty.

Winnipeg fulfilled the dreams of its forefathers. It paid a fitting tribute to that past generation of young men who, by hard work and ability, laid the foundation of its present growth and prosperity. For by popular subscription, Winnipeg has erected substantial buildings for its Young Men's Christian Association and provided for the physical and mental development of its present and future generation of young men.

The unselfish spirit of those who contributed toward the erection of Winnipeg's Y. M. C. A. buildings enabled the management to secure not only well drawn plans but to employ reliable and responsible contractors and purchase only the best of building material.

The main building, illustrated on this page, is of stone, brick and terra cotta exterior and was designed by Messrs. Jackson & Rosencrans of New York, and by J. H. G. Russell, of Winnipeg. The same architects designed the building for the Y. M. C. A. branch located in another part of the city. The general contractors for the main building were Messrs. Hazelton & Walin, and for the smaller building, S. Bryngolfsson & Company. The Dominion Bridge Company were the fabricators.

Dixon's Silica-Graphite Paint protects the steel work of Winnipeg's, as well as other Y. M. C. A. buildings. Its use reflects careful judgment and its ultimate cost is far less than that of any other protective paint, because it *lasts longer*, thus saving in labor and material, as compared with the use of inferior paints. Write us for long service records all over the world under all kinds of conditions of wear, weather, gases and corrosion from any cause.

EGGS

George Fitch tells us that an egg is composed of four parts—the shell, the yolk, the white and the price. The shell is very fragile, like one of the Ten Commandments and can be broken without an effort.

The price is the biggest part of the egg and its greatest pro-

tection. The price alone has saved millions of innocent young eggs from being boiled and eaten.

Eggs are very delicate and spoil very quickly. When an egg spoils, it puts its whole heart into the performance. One can tell a spoiled egg as far as it can be seen, and with one's eyes shut at that, if the wind is in the right direction.

There was a time when every one ate fresh eggs in summer and went without in winter. Nowadays, however, business methods have led men to buy up all the fresh eggs in summer and store them until winter, when they have acquired a rich russet flavor. Those eggs which cannot be sold in winter are held over and sold next summer. These eggs are not explosive, but little else that is good can be said of them.



FIRST NATIONAL BANK BUILDING, RICHMOND, VA.



TWO NOTABLE BUILDINGS OF RICHMOND, VA.

On this and the preceding page our illustrations show two of Richmond's newest and most modern buildings.

Both buildings were planned by the well known architects, Messrs. Clinton & Russell, and erected by the Geo. A. Fuller Company, General Contractors.

The illustration above is of the substantial home, nearing completion, of the Life Insurance Company of Virginia. On the opposite page is shown the skyscraper of the First National Bank. This building is twenty-one stories high and contains three thousand tons of steel.

The steel work in both buildings is well protected from corrosion and decay, for both shop and field coats of Dixon's Silica-Graphite Paint were applied.

Some other notable buildings of recent construction in Richmond, Va., are the Mutual Insurance Building, Virginia

Trust Company's Building and the Hotel Richmond, all of which have their steel perfectly protected with Dixon's Silica-Graphite Paint.

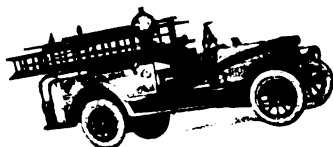
WOULD OBLIGE US FOR CRAIN

HANOVER, July 29, 1912.

Mr. DIXON:

Please send me samples of your Crain. Would oblige you for so doing. (Signed) _____

"MY FATHER talked me into taking this course in domestic science." "And how do you like domestic science?" "Well, it looks like ordinary kitchen work to me. If my suspicions are confirmed I shall drop the course and make father buy me a fifty dollar hat."—*Louisville Courier Journal*.



THE WEBB MOTOR FIRE APPARATUS CO.
 MANUFACTURERS OF
 MOTOR DRIVEN FIRE ENGINES, CHEMICAL ENGINES,
 COMBINATION WAGONS & AERIAL TRUCKS.
 3900-12 WASHINGTON AVENUE,
 ST. LOUIS, U.S.A.

Dixon Crucible Company,
 Jersey City, New Jersey.

Gentlemen:-

In reply to your inquiry of recent date, as to what we think of your lubricant, beg to state that our repeat orders of your products should be very good evidence that we are very well satisfied with your goods.

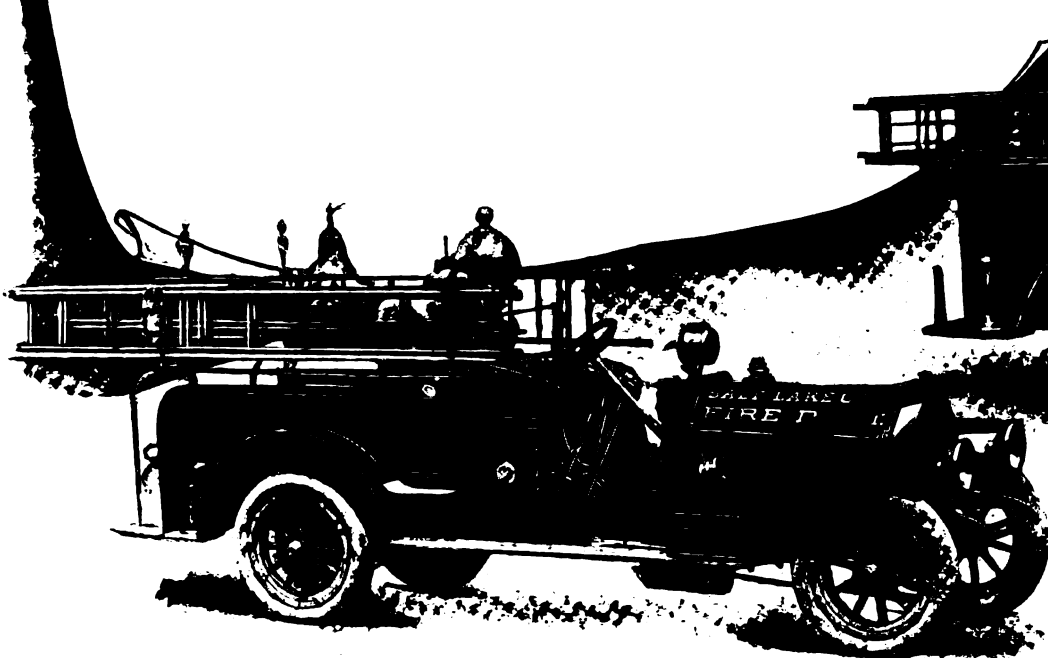
We might add further that in addition to using your goods ourselves, we are recommending its use to purchasers of our apparatus.

In view of the severe service to which fire apparatus is subjected, we have very thoroughly tested out your lubricants before adopting them, and found them superior to any others that have come under our observation.

Yours very truly,

THE WEBB MOTOR FIRE APPARATUS CO.

A. L. Mathewson
 Superintendent.



E. T. ROBINSON, President.

V. M. ROBINSON, Vice Pres.

ROBINSON FIRE
 ESTABLISHED 1871



CABLE ADDRESS "ROBFIRE"
 WORKS AND OFFICES:
 4250 TO 4268 N. 20th ST.

Joseph Dixon Crucible Co.,
 Jersey City, N. J.

Gentlemen:-

It affords us pleasure to state that our Dixon Graphite Greases.

This firm has had lubricating our piston pumps known grease on the American last found the missing link. all of our cars, lubricated frankly recommend them to any solve the lubricating problem.

In a fire pump it is the constant strain and fear but since our adopting the Dixon had no more trouble. We did not until we had put them to the test could have imposed upon it. beautiful.

We have notified the results in this matter and of the car, that they will have

We beg to remain,

WVB-AB

ROBINSON

ED HANLON, Treas.

W H ALLEN, Secy.

RATUS MFG. CO.

INCORPORATED
1894



CHEMICAL DEPARTMENT
1916 TO 1928 FERRY ST.

St. Louis, June 18, 1912.

sure to recommend the

no end of trouble in
We were open to try any
market, but we have at
We are now equipping
with Dixon grease and can
by one who is wishing to
is a serious matter to have
of a bearing running hot,
Dixon Graphite Grease, we have
not adopt these greases un-
test serious test that a bearing
The results have been simply
all of our customers of our
sincerely hope for the life
and our experience.

Yours truly,
EDSON FIRE APPARATUS MFG. CO.
W. W. Southern
Supt.



THE MAIS MOTOR TRUCK COMPANY
INDIANAPOLIS, INDIANA, U.S.A.

DEPARTMENT

Joseph Dixon Crucible Co.,
Jersey City, N. J.

July
Twelfth
Nineteen-Twelve.

Gentlemen:-

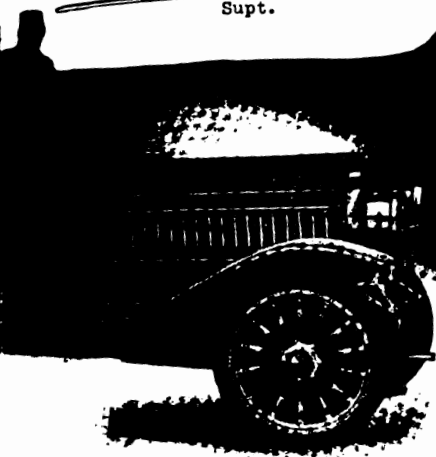
For the past year I have been trying various
makes of grease and up to the present time I have not
found any grease that is equal to "Dixon's Graphite".
It is far superior in various ways to any make that I
have tried. For reasons:- You can always rely upon
its keeping parts cool and for testing purposes I fully
believe that there is nothing in the market equal to it,
and I feel that I can not recommend it too highly.

Yours very truly,

THE MAIS MOTOR TRUCK CO.

FM-Mc

J. H. Mailing
Superintendent.





**COMMERCIAL NATIONAL BANK BUILDING,
RALEIGH, N. C.**

This month the Commercial National Bank of Raleigh, N. C., will celebrate the twenty-first anniversary of its organization by occupying its newly constructed \$250,000 building, designed by P. Thornton Marye, Architect.

The new bank building, a picture of which appears above through the courtesy of the *Manufacturers' Record*, is in every way a distinct commercial advance in Raleigh, for its 180 offices means a greater attraction for the representation of outside industries.

The new building is ten stories high with a roof designed for use as a roof garden. It contains 600 tons of steel work, fabricated by the Richmond Structural Steel Company and painted with Dixon's Silica-Graphite Paint, Dark Red and Natural Colors. The J. G. Wilson Company were the general contractors.

Dixon's Silica-Graphite Paint is being used quite extensively throughout the South, and many notable buildings are protected with this peer of all paints. It is economical, for it *lasts longer*, thus saving in labor and material. Its durability is a matter of record for it has made good for nearly fifty years. Write us for paint proof.

EARLY to office and late to leave it,
Hustle all day and you can't beat it.
Call an officer!

**DIXON'S AUTOMOBILE LUBRICANTS MEET WITH
THE APPROVAL OF MOTOR FIRE
TRUCK MANUFACTURERS**

We are particularly proud of our double page illustration which appears on pages 3484 and 3485 in this issue of GRAPHITE.

We have always known the superior lubricating value of Dixon's Automobile Lubricants and we know what many others think about them, but it is nevertheless gratifying to receive commendation from sources that cannot help but add to the prestige already attained.

The conditions met with in lubricating a motor car truck are particularly severe. The lubricants used must necessarily remain for indefinite lengths of time in the car unused and must also be able to meet the immediate and trying conditions of active service. Flake graphite remains inert under all conditions. It is not affected by heat or cold nor even acids and alkalies. It is therefore ideally suited to the peculiar requirements of the motor fire truck.

We hope that every reader of GRAPHITE will take the trouble to read the three letters in our centre page display, for whether he motors for pleasure or whether he owns or operates a motor truck, the automobilist cannot help but recognize and be guided by the experience of these motor fire truck manufacturers.

DIXON's graphite publications sent free upon request.

THE MISLEADING RESULTS OF CERTAIN PAINT TESTS

At the annual meeting of The American Society for Testing Materials held in Atlantic City, June, 1908, there was presented a paper entitled "The Inhibitive Power of Certain Pigments on the Corrosion of Iron and Steel."¹ This paper was based upon experiments with different pigments and was made as follows: Carefully weighed samples of different kinds of steel were placed in bottles connected together in the same manner as a train of wash bottles, equal quantities of the pigments to be tested being inserted in the successive bottles, together with an equal volume of water. Air was then bubbled through for various lengths of time, after which the samples of steel were removed, cleaned, brushed, dried and re-weighed. The condition of the surface and the loss of weight were noted.

The importance of the matter was apparent and a committee of five was appointed to make the test in a larger way on the lines indicated above. The results of their work is given in the following table (No. I), the average findings of the five investigators being given.²

TABLE I.

LOSS OF STEEL IN GRAMS IN TESTS CARRIED OUT ON PIGMENTS
TO ASCERTAIN THEIR VALUE AS RUST INHIBITORS

No.	Pigments	Average
1	Zinc chromate	0.0194
2	Zinc and barium chromate	0.0229
3	Zinc and lead chromate	0.0246
4	Zinc oxide	0.0682
5	Zinc lead white	0.0876
6	Barium chromate	0.0978
7	Ultramarine blue	0.1186
8	Chrome green (blue tone)	0.1453
9	Prussian blue (W. I.)	0.1591
10	Lithopone	0.1754
11	Willow charcoal	0.1880
12	Litharge	0.2038
13	Dutch process white lead	0.2122
14	Quick process white lead	0.2176
15	Calcium sulphate	0.2328
16	Metallic brown	0.2352
17	Orange mineral (French)	0.2432
18	Calcium carbonate (whit.)	0.2484
19	Sublimed blue lead	0.2492
20	Lemon chrome yellow	0.2543
21	Orange chrome yellow	0.2557
22	Medium chrome yellow	0.2645
23	Chrome green	0.2651
24	Venetian red	0.2666
25	Bone black	0.2674
26	Asbestine	0.2762
27	Keystone filler	0.2881
28	Orange mineral (Amer.)	0.2970
29	Umber	0.3009
30	China clay	0.3034
31	Calcium carbonate (pre.)	0.3111
32	Red lead	0.3117
33	Prussian blue (neutral)	0.3171
34	Indian red	0.3228

35	American vermilion	0.3270
36	Sublimed white lead	0.3300
37	Sienna	0.3761
38	Naples yellow	0.3797
39	Prussian blue (W. St.)	0.3825
40	Mineral black	0.3993
41	Barytes	0.4472
42	Natural graphite	0.4545
43	Bright red oxide	0.4566
44	Artificial graphite	0.4641
45	Ochre	0.4716
46	Carbonith white	0.4904
47	Carbon black	0.5099
48	Precipitated blanc fixe	0.5467
49	Lampblack	0.7294

In a general way these were classed tentatively as "inhibitors, indeterminates and accelerators," depending as to whether they appeared in the first, middle or latter part of the table. "As a result of the preliminary tests it seems desirable to the committee that a systematic investigation of the same pigments should be made under service conditions. The Paint Manufacturers' Association of the United States offered to erect a series of steel panels at Atlantic City, and place them under the supervision and control of this society."³

During the discussion which followed the presentation of the reports announcing the work which had been and was to be done, the chairman of the committee spoke as follows: "I believe we are going too fast in the use of the terms "accelerators and inhibitors." The test was made under purely laboratory conditions and the connection between the results obtained with the pigment in water suspension and when applied as an oil film has not been entirely established. The exposure tests that we have under consideration, are being carried on so as to connect theory with practice. One aim of the committee has been to develop accelerated tests which would be in harmony with service; for *unless accelerated tests are in harmony with service they have no value.*"⁴

This test fence was erected late in the fall of 1908. The first inspection report was made at the June meeting in 1910. The second report was made at the meeting held in 1911. The third inspection report has not yet been presented. There were thirty-one panels painted with paints containing single pigment. Several other panels were painted with paints containing composite pigments, also some with inhibitive undercoats with excluding top coats. It is not our purpose to consider these latter tests in this paper.

Seven inspectors made the first examination, and the method of examination was as follows: Each plate was given two separate marks graded upon a scale of ten, one mark to signify the condition of the plate as far as effects of corrosion were discernible, and the other to grade as nearly as possible the present condition of the protective coating.

In the following table (No. II) the average of all findings is given and refers to the corrosion condition only. The first column of numerals gives the relative status of the pigments in the "water-tests" referred to. The second column gives the percentage rating on the first examination, while the third column gives the relative position of the various paints in that examination. The fourth and fifth columns gives the same information in connection with the examination of 1911.

TABLE II

Name	Position Water Test	1910 Inspection		1911 Inspection	
		Rating	Position	Rating	Position
Zinc chromate	1	9.4	6	9.5	5
Zinc and barium chromate	2	9.7	2	9.5	6
Zinc and lead chromate	3	9.5	4	9.7	4
Zinc oxide	4	3.	29	1.5	28
Zinc lead white	5	8.	18	4.7	23
Ultramarine blue	6	4.	28	0.0	32
Chrome green (blue tone)	7	9.8	1	9.8	3
Prussian blue (W. I.)	8	8.8	13	9.	7
Lithopone	9	4.1	26	2.2	26
Willow charcoal	10	8.8	14	8.8	10
Dutch pro. white lead	11	8.7	15	3.7	25
Quick pro. white lead	12	8.9	12	4.2	24
Calcium sulphate	13	2.5	30	1.7	27
Metallic brown	14	6.3	24	6.3	20
Calcium carbonate (whit.)	15	.1	31	0.0	31
Sublimed blue lead	16	9.6	3	8.8	9
Medium chrome yellow	17	5.5	25	7.7	15
Venetian red	18	7.2	21	8.	14
Asbestine	19	7.3	20	5.1	22
Orange mineral (Amer.)	20	9.	11	8.3	11
China clay (kaolin)	21	7.3	19	6.3	19
Calcium carbonate (prec.)	22	.0	32	0.0	30
Red lead	23	8.7	16	8.3	12
Amer. Vermilion	24	9.1	9	1.0	1
Sublimed white lead	25	9.5	5	9.	8
Prussian blue (W. S.)	26	9.2	8	9.8	2
Barytes	27	4.4	26	0.7	29
Natural graphite	28	9.1	10	6.8	17
Bright red oxide	29	9.3	7	8.1	13
Artificial graphite	30	7.1	22	5.9	21
Carbon black	31	8.3	17	7.2	16
Lampblack	32	7.1	23	6.3	18

An analysis of Table II will show conclusively that the "water-test" of pigments is entirely unreliable for determining the protective value of paints made from them. While the results in the case of the chromates seems to support the indication of the test, yet the results in many other instances is such as to entirely condemn it. For instance, the "water-test" position of Zinc Oxide is fourth, while its rating on the second examination is twenty-eighth. Ultramarine Blue stands sixth, while at the end of the second year it rates thirty-second. On the other hand, American Vermilion standing twenty-fourth in the "water-test," ranks first at the end of the second year. Prussian Blue (water stimulative) advances from twenty-sixth place to second. White Leads recede from eleventh and twelfth position to twenty-fifth and twenty-fourth, while Sublimed Lead advances from twenty-fifth to eighth. All of the carbon and graphite paints, standing at the very bottom of the list in the "water-test," advance materially. Red Lead advanced from twenty-third to twelfth. Note that the Prussian Blue (water stimulative) standing twenty-sixth in the original test, on the examination ranked second, while Prussian Blue (water inhibitive) standing sixth in the "water-test," stands seventh on the same examination.

The result of this work shows clearly that the "water-test"

of pigments is not a safe guide for determining the protective value of paints made from them. The conditions of the tests are so at variance with those of actual service that it is surprising that the matter should have been given such serious consideration and broad publicity. The discrepancy between the conditions of the tests and of service was promptly recognized, and a number of investigators sought for a test which would be more in harmony with service conditions.

One of the results of this work has been a method developed by Mr. W. C. Slade and described by him in the *Journal of Industrial and Engineering Chemistry*, issue of March, 1912. The work was carried out in the Research Laboratory of Applied Chemistry of the Massachusetts Institute of Technology.

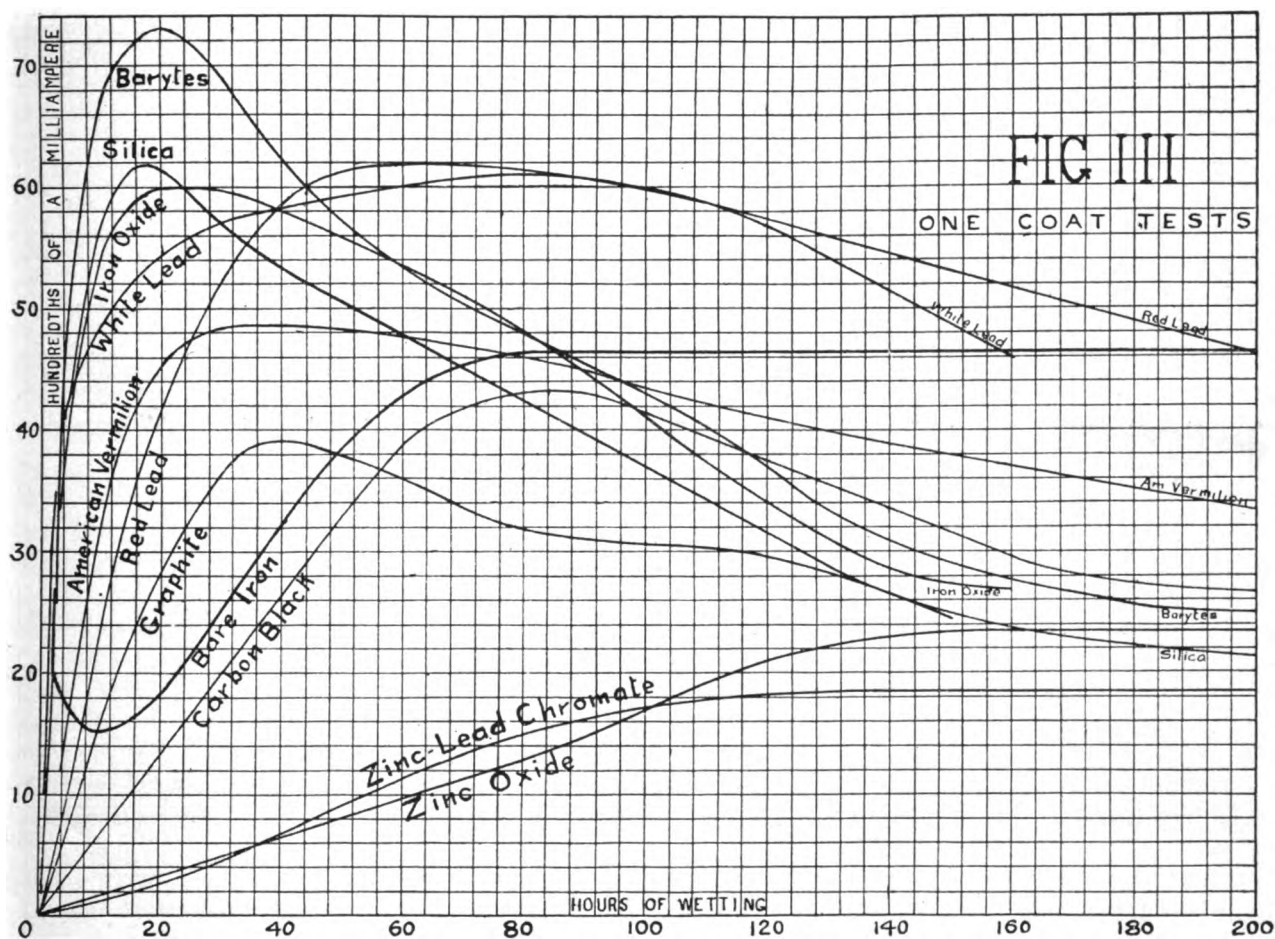
While the "water-test" applies only to the corrosive effect of pigment on steel in the presence of water and air, the test described by Mr. Slade applies to the action of air and water on steel through a paint film, and in that respect is more nearly parallel to service conditions. Quoting from Mr. Slade's article: "The ideal paint film would not only be uniform and tough and adhere well to the surface beneath, but would be at the same time sufficiently elastic to prevent cracking and quite impervious to destructive gases and liquids. *If it be a case of protecting iron and steel against corrosion by means of a paint film, imperviousness to moisture and to air or to oxygen is the property most essential.*" This new method determines the degree of imperviousness or the excluding power and allows all results to be recorded permanently and to a certain extent quantitatively. It utilizes the principles of alternate wetting and drying, and works under conditions made to imitate actual conditions as far as possible."

Stated very briefly, the method of Mr. Slades' test is as follows: Two spirals of iron wire, each covered with the paint to be tested, are placed, one each in the two compartments of a cell. A cloth diaphragm is located in the bottom of the partition separating the two compartments. An external circuit connects the two spirals and the cell is filled with a neutral electrolyte. A current of air or oxygen is forced through the solution in one compartment, so that the air in that compartment is always saturated with oxygen. Now if the paint film is porous or broken at any place, an electric current is developed in the circuit. The amount of this current is taken as an indication of the permeability of the film, and inversely as a measure of its desirability for protective coatings. These spirals are so connected with a suitable clock-work, that they are alternately out of the electrolyte and in it, and in that way attaining the desirable conditions of wetness and dryness so necessary in order to arrive at a proper conclusion. The amount of current is measured by a milliammeter which may be thrown consecutively into circuit with the different sets of painted spirals which are being tested.

Mr. Slade discusses the theory of the method as follows: "Consider two identical pieces of iron immersed in water, containing a dissolved neutral electrolyte to give conductance and connected through an external circuit. No current can pass through the external circuit in either direction, for identical conditions of equilibrium obtain at each metallic surface, and will obtain until this equilibrium is distributed at one of the electrodes. By removing hydrogen ions at the surface of the electrode, as can be done by depolarizing with a steady stream

of oxygen, the equilibrium can be constantly disturbed. At the same time an electric current passes continuously through the circuit. To maintain the equilibrium of ionic charges within the solution, metallic iron must pass into solution at some point in the form of ferrous ions. This takes place almost wholly at the undepolarized electrode. Of course water is the product of the depolarization, and the ferrous ions unite with the hydroxyl ions (which are chemically equivalent to those hydrogen ions removed) to form ferrous hydroxyl, which in turn is oxidized to the ferric form and to insoluble rust. A rust coating forms at the depolarized electrode or cathode and so some iron must be going into solution here; but it is only a few per cent of that removed into solution from the other electrode or anode. The cause for this probably lies almost wholly in local action on the cathode, for practically no depolarization takes place at the anode.

mences. Though the driving force of the reaction is not affected by the presence of the film, the rate of reaction or depolarization is greatly affected. The initial current detected is very small—a few thousandths of a milliampere—because of the great resistance offered by the film, not only to the passage of a current but to the diffusion through the pores of the film of the air. With increased porosity comes an increased rate of diffusion and an increased rate of depolarization and a decrease in film resistance. The current consequently increases. At this time any depolarizing power possessed by linozyn that may still be unsaturated to a certain degree, should show its influence. The relation between the rate of diffusion through the film and the rate of depolarization was well illustrated by an experiment where several coated spirals, with films slightly disintegrated, were supplied, first with excess air and then with excess oxygen gas. In the



"Let the electrodes be in the form of spirals of iron wire and the electrolyte consist of normal KCl; and consider the cathode spiral to be covered with a well dried coat of paint and the solution around it to be continuously saturated with air. The combination of painted spiral—electrolyte saturated with air—bare iron spiral—electrolyte containing no air will be called for convenience a "paint cell." The paint film may or may not electrically insulate the cathode wire. Probably every paint is porous at least to some extent, so that it is only a question of time as to how long it will require for the solution to penetrate the film sufficiently to establish contact with iron at one or more points. When this occurs, the hydrogen ions that tend to polarize are depolarized by the oxygen of the air which is in solution, and the operation of the paint cell com-

second instance the current values more than doubled, returning again to the original values when air was resubstituted.

"The relative behavior of films made from different kinds of paints indicates the relative excluding powers to moisture and oxygen. The increase in current observed in any paint cell may be recorded in a current-time curve giving a permanent record of the behavior of the film.

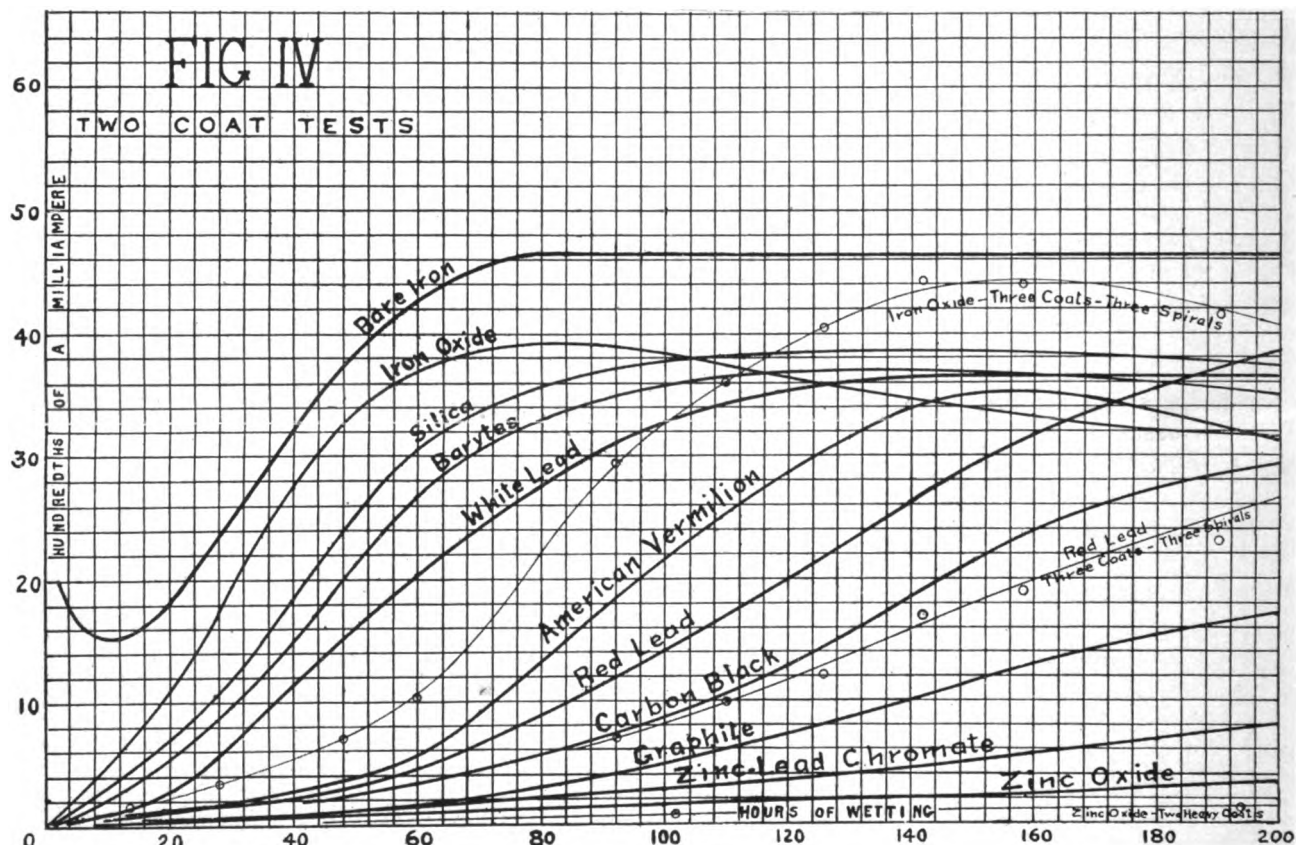
"It is interesting to note the analogy between the arrangement of the paint cell and the conditions existing on a painted surface, injured with scratches or bare spots, of any portion of an exposed steel structure. Assuming the injured surface to be covered with dew or rain water, then the bare spot or scratch, the protected or painted surface around the injury and the water covering both correspond respectively to the

anode, cathode and electrolyte of the experimental paint cell. Of course, in this case the rate of depolarization would be less and the resistance to passage of current through the liquid circuit much greater than in case of the paint cell, but the process would proceed definitely and steadily, notwithstanding.

"To determine as far as possible the value of the apparatus, paint mixtures were made from ten representative commercial pigments, some of which are recognized as good, and some as poor paints, according to the point of view. The pigments were kindly furnished by the Paint Manufacturers' Association and came in paste form, ground in pure, refined linseed oil. In each case they were thinned to the desired viscosity with a mixture by volume of two-thirds pure raw oil and one-third oil of turpentine. The amount of oil used in grinding each pigment, and the amount of vehicle for thinning each, is on record. The object was to obtain a fairly rapidly drying

hite were slightly thicker than the other films. But the difference is only great enough to account for but a small part of the wide divergence from one another of the finally determined mean curves. Aside from influence of thickness, which is directly related to excluding power, is to be considered the influence of the depolarizing property of the film. It appears that this is more a property of the film as a whole, than a property of any constituent part of the film.

"On Figs. III and IV appears a curve called the bare iron curve. This was determined by making a run with fourteen carefully cleaned bare iron cathodes exactly similar to those used in the paint tests. At the start of the test, with no rust on the spirals, the current was about 0.20 milliamperes. As a thin rust film formed, either the resistance must have increased or the electromotive force decreased, for at ten hours of wetting a minimum value



paint mixture that would be of a viscosity not far from that desired for practical application, and at the same time be of such a nature that fairly thick and very uniform coats could be obtained on the iron spirals.

"In order to bring the results together in comparative relationship, Figs. III and IV have been prepared. Each curve on both of these Figs. is drawn from data obtained from the various best representative curves of the individual tests by averaging these curves. Each curve on Fig. III is determined by the position of two of the one-coat test curves; those on Fig. IV by the positions of the three corresponding two-coat test curves.

"It may be noted here, however, that the increased protection of the two coats over the one coat of each paint shows up well; also that the relative position of the curves on both Figs. is in general the same. It will be remembered that the films of zinc oxide, zinc-lead chromate, carbon black and grap-

of about 0.16 milliamperes was reached. Beyond this point the current rapidly increased until a constant value of 0.466 milliamperes was reached. This period of increase marks also the period of rapid accumulation of a rust coating. At the end of 197 hours of wetting, the accumulated rust, which acted as a spongy envelope about the wire, was carefully removed and the run again continued. The current immediately fell to about 0.25 milliamperes and, as previously, strangely enough passed through a minimum before rust formation caused another rise. The increase in current was concomitant with the increase in depolarizing power of the coating. Within the spongy envelope the rate of the union of hydrogen and oxygen was increased. For the first hours of wetting, the quantity of rust formed is not sufficient to exert its influence in this direction.

"The form of the curves of the one-coat paint tests shows that, in several instances, marked depolarizing power is ac-

quired soon after the films begin to disintegrate sufficiently to allow a more rapid absorption of solution and air. Maxima of current values are reached far above that given by a bare iron cathode when heavily covered with rust. With the two-coat curves the maxima are less pronounced or even do not occur at all.

"Evidently there are two distinct effects that tend to overshadow each other; that of depolarizing, which is most pronounced in thin coats that disintegrate easily (and so acquire high powers of absorption), and the effect of exclusion or imperviousness, which increases as the thickness of any coat or the number of coats is increased.

"It is interesting to note that zinc oxide, zinc-lead chromate, carbon black and graphite appear as the best excluders. But given a film sufficiently thin, such that the depolarizing effect may become prominent, then it is again to be noted that while zinc oxide and zinc-lead chromate do not increase the rate of depolarization, carbon black and graphite do increase the rate of depolarization.

"Graphite and carbon black are recognized most generally as good excluders, graphite because of the unctuous nature of the pigment. The danger in their practical use lies in getting coats too thin. . . . The first experimental results obtained by Walker and Lewis agree with those obtained now, generally considered, for they used films much thinner than those tested here. That is why in their tests carbon and graphite showed up the poorest. It is also interesting to note the relation between the classification of the paint films according to this test, and the classification of the pigments contained in the film according to the "water-test." As a result of the latter test, Cushman has determined upon calling pigments either stimulators of corrosion, inhibitors or inert (indeterminate) substances. Preserving the order of his listing, a few pigments have been selected from his table, as follows: Inhibitors: zinc-lead chromate, zinc oxide, white lead; Indeterminates: red lead, princess metallic brown, American vermilion; Stimulators: bright red oxide, carbon black, barytes, graphite. Again, excepting carbon and graphite, there is general agreement between the order of the preceding pigments, and the order of the positions of the current-time curves of the paints made from some of these pigments and tested by the new method."

Mr. Slade thus tabulates the order of excluding values, as indicated by the curves:

- 1—Zinc oxide
- 2—Zinc-lead chromate
- 3—Graphite
- 4—Carbon black
- 5—Red lead
- 6—American vermilion
- 7—White lead
- 8—Barytes
- 9—Silica
- 10—Iron oxide

As in the "water-test," zinc oxide stands very high, showing it to be a good excluder as well as an inhibitor. Zinc-lead chromate also holds its place, but quite contrary is the case of graphite which now is in the forefront, while in the "water-test" it was almost last.

A careful comparison of the results of these two methods of paint testing as well as a comparison of each with the results indicated from an examination of the Atlantic City Test Fence, seems to indicate that the experience of years is not to be set aside by any accelerated test yet devised.

Few well informed or experienced people took the "water-test" seriously, not because of any defect or inaccuracy in the method itself, but because the conditions under which it was made did not parallel service conditions. More will accept Mr. Slade's method, simply because it more nearly conforms with practice. Still a great many will not be able to pass the first obstacle and that is the high position given to zinc oxide. We feel that it will require more than an accelerated laboratory test to convince many experienced men that zinc oxide will make a better protective paint than will graphite, carbon black, red lead or iron oxide.

The one thing which these accelerated tests do not take account of is the rate of change of the film from its condition of highest efficiency. All paints are protective for a varying period of time after they are properly applied. For instance, on the Atlantic City Test Fence the protection of zinc oxide for the first few months was most excellent, but for some reason it departed rapidly from its condition of high efficiency, and now has practically disappeared from the surface of the plates, while many other paints are still giving excellent service.

It may be said without any hesitation that at the present time we are just where we were before this agitation as to inhibitive and accelerative pigments started. The paints which were good at that time are good now and the "water-test" of pigments, which, if followed to its end, would have in many cases brought about the adoption of inferior paints, will have to be abandoned as being worthless.

REFERENCES

- 1—Proceedings Eleventh Annual Meeting American Society for Testing Materials. Page 605.
- 2—Proceedings Eleventh Annual Meeting American Society for Testing Materials. Page 76.
- 3—Proceedings Thirteenth Annual Meeting American Society for Testing Materials. Page 74.
- 4—Proceedings Twelfth Annual Meeting American Society for Testing Materials. Page 212.

HE STUTTERED TOO

Three strangers were in the Pullman smoker, when one of them turned to another and asked:

"H-How f-f-f-far is it t-t-to J-J-J-Jersey City?"

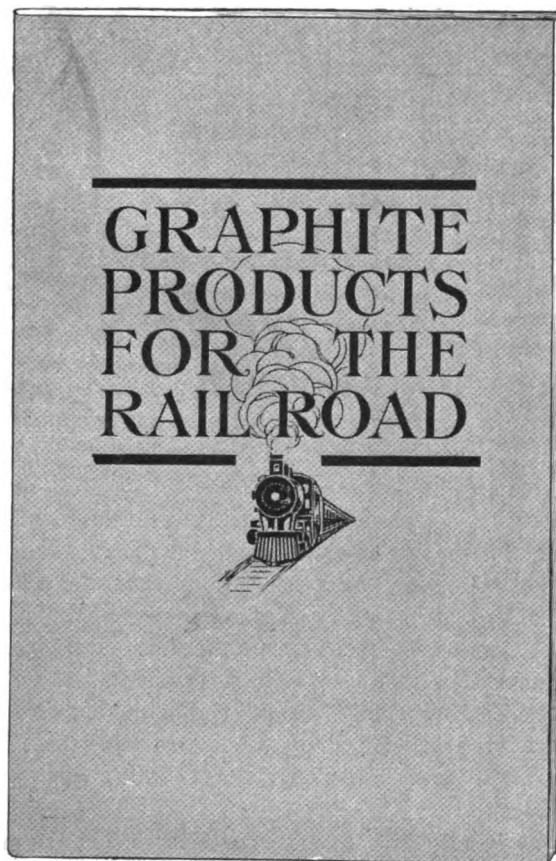
The man addressed made no reply, but got up and left the car. The stutterer then turned to the third man, who gave him the information.

A few moments afterward the third man met the one who had left the car and said:

"See here! Why did you go out without answering, when that man asked you a civil question?"

"D-D-Do you think I w-w-wanted to g-g-g-get my-head knocked off?" was the answer.—*Ladies' Home Journal*.

DIXON'S graphite publications sent free upon request.



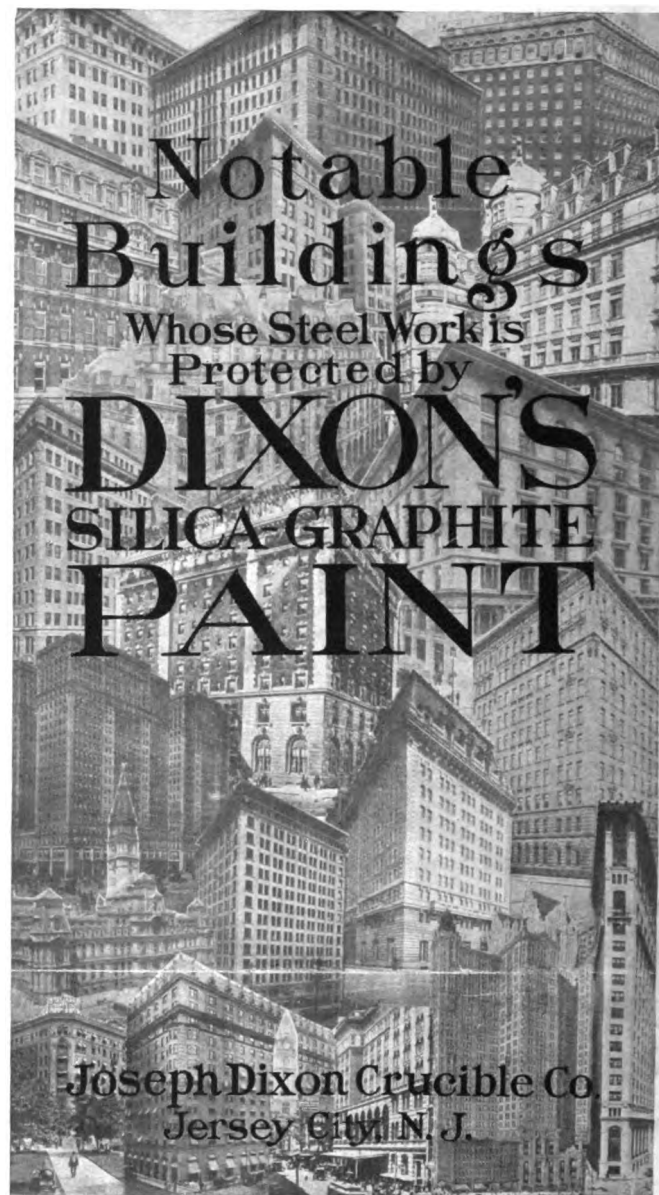
The second edition of "GRAPHITE PRODUCTS FOR THE RAILROAD" is now ready for distribution.

Owing to the popular reception accorded to the first edition of this booklet the supply was exhausted long before we had anticipated.

The present edition incorporates certain changes in standard practice. It also includes several new Dixon Graphite Products. The booklet is presented for the consideration of Mechanical Departments, and with the belief that its contents will serve as a valuable indication of the remarkable efficiency and economy of Dixon's Graphite Products.

In writing, please ask for booklet No. 190-K. It's free, of course.

Joseph Dixon Crucible Co.
JERSEY CITY, N. J.



OVER 350 prominent structures, nearly 150 cities, and almost every type of building are represented in the newest and most complete list of Notable Buildings Whose Steel Work is Protected by

DIXON'S SILICA-GRAPHITE PAINT

This booklet is a record of deeds. It reflects the judgment of those who have used DIXON'S PAINT. We want to send this booklet to all interested in the problem of protecting structural steel. Will you write for booklet No. 190-B?

Joseph Dixon Crucible Co.
JERSEY CITY, N. J.

GRAPHITE

VOL. XIV.

OCTOBER, 1912.

No. 10.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

BEWARE OF "CURES"

The Medical Times (New York, July) proposes that laws be passed by the various state legislatures making it a crime to assert publicly that a medicine will positively "cure" any disease. Such assertion it considers *prima facie* evidence of fraud. *The Medical Times* adds, a person suffering from some chronic ailment grasps at any straw so long as it is labeled with a medical name. He gets the experience, often of the sorriest nature, while the quack gets the money.

"Physicians journeying to the sessions of the A. M. A. at Atlantic City were amazed at the effrontery of a patent-medicine concern in announcing on huge signs that a certain nostrum "cures" eczema. The medical profession has found this disease most

difficult to overcome, but the quacks have no hesitancy in claiming a 'cure' in their nostrum. To those who know, the assertion that this patent medicine "cures" eczema is rankest nonsense, and it should be made a serious offense to put forth such silly, misleading and at times harmful statements."

What is written above in regard to human ills may be very fittingly applied to the common ills of all classes of machinery. There is today a list apparently without end of cures for friction and wear in the cylinders and bearings of machinery of all kinds.

A man who has tried a number without remedying his trouble tries another with no better result, and his experience is the experience of hundreds and thousands of others.

Mechanical men seem in spite of their education and experience to lose sight of the fact that in spite of the polishing that bearings receive, including the surfaces of balls and races and roller bearings, that even the smoothest finish is in reality a mass of scratches and it is merely a matter of how minute these scratches are. If the scratches or the irregularities are appreciable to the eye or to the feel, then even the best of plain grease or oil lubricants fail to have the desired effect.

Another important thing that seems to be lost sight of, is the fact that on account of the cost of labor the bearings of American made machinery do not have the polishing and the hand-work put upon them that similar machines receive in countries where the cost of labor is so much less than here in America. Therefore, one must not expect in view of the con-

ditions, to find any cure in any oil or any grease until the bearing surfaces are properly treated.

To be properly treated such bearing surfaces should be made smooth by the use of Dixon's thin Ticonderoga Flake Graphite which fills up all irregularities, making a veneer-like coating of graphite of marvelous smoothness and endurance.

Even after this treatment, the oil or grease selected should be that which expert experience has demonstrated to be the most suitable for the particular work to be done.

It has been demonstrated that even on the same engine where slow speed and light work is to be done, a light oil will answer all requirements, while if that engine is driven at high speed and under heavy duty, an entirely different oil must be used.

The question of scientific and proper lubrication is just as interesting and just as important as the question of scientific medical treatment.

GRAPHITE AS A SURFACER

Lubrication is the life of a moving mechanical part. If you neglect lubrication or do it on a hit-and-miss principle, you pay for it by broken parts, shut-downs and other kindred troubles. The road to the junk heap is made an easy one if insufficient or inferior lubricants are used.

No matter how well you may think a piece of machinery is lubricated, unless provision is made for the time when oil or grease fail to do their duty (caused by an obstructed oil channel, overload, leaks, etc.), serious abrasion is likely to take place and it is then the lubricant which can stand up under adverse conditions, take its knocks and is not thin skinned, that protects against losses. Flake graphite will keep metal surfaces apart, because of its affinity for metal surfaces and its ability to knit up over them a covering, tough, thin and unctuous to a high degree.

Professor Goss says: "The tests show that with no other lubrication than flake graphite the journal and brass may be run together for hours at a time, heating up to a high temperature, and this may be done repeatedly, and yet the rubbing surfaces of the bearings remain unscored. As a protection against abrasion of rubbing surfaces, I know of nothing that can equal the record of flake graphite as herein disclosed."

—Practical Engineer.

LUBRICATING graphite means flake graphite—always! Experiment destroys confidence and condemns the true practice of graphite lubrication.



ESTABLISHED 1827



INCORPORATED 1868



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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ADVICE ABOUT COMMUTATOR LUBRICANTS

In answer to a correspondent who seeks a formula for a home made commutator compound, the *Practical Engineer* recommends the addition of as much powdered graphite to melted paraffin as the latter will dissolve, afterwards running the mixture into molds and allowing it to harden.

This seems a laborious process attendant with uncertain results and possibly greater expense than seems necessary. Wherever Dixon's Graphite Brushes are used, commutator lubrication is unnecessary. Where carbon brushes are used, however, Dixon's Graphite Commutator Lubricant is found to be a convenient and efficient lubricant. It is made of a peculiarly rich and smooth graphite that only the Dixon Company produces and is sold in convenient stick form.

GRAPHITE BRUSHES

How Commutator Trouble Was Eliminated by Their Use

In the July 15, 1912, issue of *Practical Engineer*, page 735, Mr. J. B. Linkes speaks of treating brushes. I think if he would use graphite brushes it would save him the trouble of having to boil his brushes. We have a compound-wound exciter with carbon brushes, that caused a lot of trouble, the commutator had to be sandpapered three or four times a day, with the result that it would have to be turned down every two or three months.

We now use graphite brushes and have run three months without any sparking; the commutators are a dark brown color and shine like glass. We use gasoline to wipe our commutators, when a black streak appears. Wet some waste with gasoline and hold against the commutator for a few seconds, if a brush is sparking hold it back of that set, as a small spark will ignite the gasoline.

We take our brushes out and wash them with gasoline too, if any collects on them it will evaporate before it has time to collect any dirt. The main thing is to keep the brushes free in the holders, free from dirt, and commutators clean and smooth. When you have accomplished this, commutator trouble is a thing of the past.

—V. C. WOOD in *Practical Engineer*.

TOBACCO AND COFFEE IN MEXICO

It is claimed that the tobacco of Vera Cruz is taking rank with that of Cuba.

The representative of the Joseph Dixon Crucible Company, Mr. George V. Guyer, who is considerable of a smoker himself, and familiar with the cigars of Mexico and Cuba, prefers those of Mexico.

Almost the entire crop of the San Andres plant is sold in Germany, and the sales are made as soon as the young plants are sent out.

The most widely known product of the state of Vera Cruz is its coffee. It is supposed that the first plants were brought by Spaniards, but it is certain that this state soon came to the front in coffee production, both in quantity and quality.

Coffee may be cultivated in almost any part of Vera Cruz at an altitude not lower than 2,000 feet. The best coffee is produced about the centre of the state at an elevation of over 2,500 to 4,000 feet. The number of coffee trees to the acre varies from 500 to 1000 trees, but they produce better coffee and more of it with not over 600 trees to the acre. The usual life of the tree is about forty years, but it is considered to be at its prime from the fifth to the fifteenth year.

NEXT!

The editor of a well known technical paper was recently asked by a reader about the properties of gasoline as a lubricant. The editor, with marvelous self-restraint, informed his correspondent that gasoline as a lubricant is absolutely worthless and that the bearing in question should be packed in graphite. We suppose now that the next inquiry will be about the relative merits of gunpowder and graphite. It seems that, like men, all lubricants are innocent until proved guilty.



DIXON'S PAINT "DOING TIME"

On trial to prove its ability to arrest all destructive influences, Dixon's Silica-Graphite Paint was sentenced to protect the water tower in the Western Pennsylvania Penitentiary at Pittsburgh, Pa.

The illustration used above shows Dixon's Paint "doing time" on this structure. The tank of this water tower holds nearly 200,000 gallons of water. Dixon's Natural and Black Colors were specified for both the interior and exterior of the tank as well as the structure.

Mr. Samuel E. Duff, Consulting Engineer, is the designer of this structure which was erected by the Des Moines Bridge and Iron Company of Allegheny, Pa.

It is probable that the remarkable staying qualities of Dixon's Silica-Graphite Paint will serve to extend indefinitely the term of sentence. In prison parlance, Dixon's Paint may become known as a "lifer."

INNER TUBES BLOW OUT

A reader of the *Automobile Trade Journal* makes the following inquiry in a recent issue of that publication:

"I have a 1910 Ford Touring Car and I am troubled with all the inner tubes blowing out, but the shoes do not. I have the third set of tires on and still have the same trouble. I am very careful not to pinch them when putting them in, barely inflating them enough to take out the wrinkles. The rip in the inner tube is from one to six inches. Please explain cause and remedy."

To which the following reply is made:

"It is quite likely that you do not inflate your tubes enough and that the casing moves and chafes the tube. You can probably prevent this by inflating the tube and cementing a strip of cloth along the inner side, which will prevent chafing at the bottom when in place. It is wise to use plenty of talc or graphite which prevents friction between the tube and the casing. You can tell whether it is a pinch or a chafe by looking at the rubber. If pinched, there will be no sign of powder or worn rubber, but chafing usually thins the rubber for a perceptible width and leaves more or less powdered rubber visible."—C. E. D.

DIXON'S graphite publications sent free upon request.



Salesman's Page



THE THREE OF US

There are three persons responsible for the successful and economical operation of a crucible.

The first—is the manufacturer, who is supposed to produce a crucible that is perfect in materials, mechanical construction and workmanship.

The second—is the man who pays his good money for this crucible with the expectation that it will earn money for him, and who should see to it that the crucible is placed in the hands of a competent melter, who will operate it with intelligence.

The third—is the melter, who is expected to perform these services and who, through lack of proper qualification, may defeat the work of the manufacturer in providing a thoroughly reliable and perfect crucible, and the hopes of the purchaser when he invested his money in the expectation that it would prove profitable.

When we sell a crucible, we consider that we have entered into partnership with the buyer, and expect him to hold up his end of the agreement by the careful handling of the crucible, which is practically perfect when it leaves our shop.

Our customers sometimes say that we should guarantee a certain number of heats from our crucibles. When you buy a gun, do you ask the maker to guarantee that it will hit the object that you aim at? A certain amount of intelligence is required for the successful operation of a crucible; if the melter realizes that it is "up to him" he is more likely to give it the careful handling necessary—it is only in this manner that the best can be obtained from the crucible.

HATS OFF TO SALESMEN

Once the world doffed its collective hat to mighty generals; now it does the same to great business men, or in other words, great salesmen. The salesmen are the men who blaze the way, who conquer new fields. They are the real men of vision and imagination. Talk about your poets and your novelists! they merely put their thoughts on paper. The salesman translates his thought to the brain of another man. Why shouldn't the world raise its chapeau?—*Footprints*.

VACATION time for the ninety-and-nine workers in the Dixon general offices here in Jersey City is now over and probably the same may be said of the vacation time of the Dixon boys and girls in the branch offices. In the words of George Fitch, the American humorist, they put the money they had saved in the grab-bag and drew out a two weeks' rest. Those that won got a nice room next to the breeze on a shady farm; those that lost got shivers at a northern beach, canned goods in a country boarding house, or a camping party in a wet spell. Whatever they got was their vacation. Some climbed the

mountains, some camped, others rested, some played tennis and golf until they were parboiled to a deep red, while others spent their time on the beach subjecting their skins to the boiling sun, and they all called it relaxation and came back like new men and new girls.

The same writer tells us that some people are so rich they can take a month's vacation and visit their farms, while others are so rich that they rest fifty-one weeks in the year and spend the other week at home watching a hired man cut coupons, but two weeks is as much as the ordinary man can stand.

Ministers, we are told, usually get a month's vacation, but this is because their congregations need the rest.

A SALESMAN'S DIVIDENDS

The reward of business corresponds in ratio to the exact amount of effort expended. It is the salesman who capitalizes his time who piles up the big bank account. And it is the salesman who makes every hour and every minute represent dividends who is getting the only fair return out of his "capital." Statisticians tell us that a man's life is worth \$10,000. Rather, we would say it is worth \$100,000 or \$300,000, judging from the dividend returns on the working lives of some salesmen we happen to know. Napoleon said every soldier in his army carried a marshal's baton in his knapsack. We would amend that to read that every salesman carries a fortune in his sample cases.—*Footprints*.

"IT IS NOT advisable to feed graphite in a common gravity feed oil cup. It may clog up the passage and cause trouble. It is often put into the cylinder through the spark plug hole with a bug gun or blown in with a tube and quill. One should never use more than a small teaspoonful for every pint of oil used. When a piston is taken out it should be thoroughly rubbed with graphite after being cleaned. Also any bearing and shaft when taken apart. Always use the fine graphite which is prepared especially for use where oil is also used."

The above appeared in the June, 1912, issue of *Ignition and Accessories* and is an excellent suggestion.

The Dixon Company prepares for gas engine use a finely powdered Ticonderoga flake graphite known to the trade as Motor Graphite.

HARVEY HERRICK

Writes: "I am convinced that the high average of speed maintained, the freedom from all kinds of lubricating troubles was due to the use of Dixon's Automobile Lubricants"

"Lubricating The Motor" and
Sample No. 190-G. on request.
JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.





PILLARS OF PERFECT PENCILS

A window display of pencils is always an attraction, a *good* window display of pencils is always an *interesting* attraction, but it is only a good window display of Dixon's American Graphite Pencils that reaches the highest degree of good taste and selection.

Window dressing is an art and requires the same kind of skill that an artist must possess to paint a beautiful picture. A firm is fortunate to possess one gifted with the power to make people stop, look and reason about the clever arrangement of merchandise, and in this respect the Emmons-Hawkins Hardware Company of Huntington, W. Va., is indeed fortunate.

The Emmons-Hawkins people, it is said, are the largest wholesale hardware concern south of Philadelphia and if the volume of their business be in proportion to the size of their store, this statement must be true. The store is large and with enough window space to permit Mr. D. P. Hill to roam about, building creations of his thoughts and ideas.

Mr. D. P. Hill possesses a reputation for window dressing that is known far and wide about the city in which he gained that reputation. Like all men who do things well, Mr. Hill employs a considerable amount of time and thought in his work for the Emmons-Hawkins Hardware Company and that work often extends far into the hours that are usually reserved for private occupations.

The display of Dixon's American Graphite Pencils reproduced above is one of Mr. Hill's latest and most pleasing productions. The window includes a variety of Dixon posters, the Dixon Brownies and an unusual arrangement of Dixon's Pencils.

WE ARE told that what a girl doesn't know, she can tell a great deal straighter than what she does know.


UNCLE SAM AS A HUMORIST

We are advised that Uncle Sam has sent out an official publication through the Department of Agriculture concerning the gases in cheese, which opens up with these startling words: "Why holes in cheese? What makes them and what do they contain?"

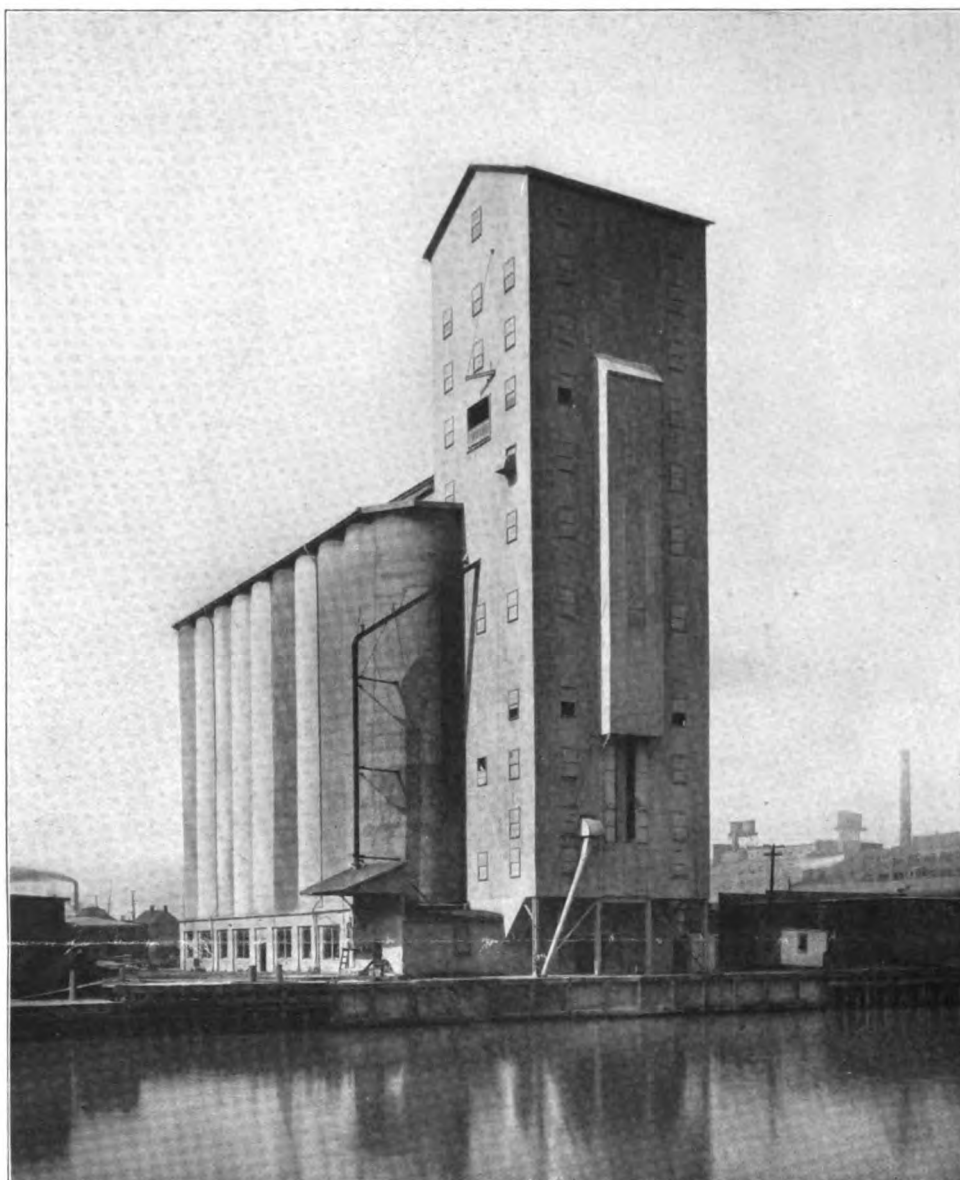
Then the report proceeds to discuss the holes in a Swiss cheese and promptly ceases to be humorous. It seems that the fault with American Swiss cheese is that our manufacturers are not able to get the proper holes in it. The holes are caused by the formation of carbon dioxide and nitrogen gas. But the carbon dioxide is the gas that really puts the holes in the cheese, and it is due to the gaseous fermentation of the sugar in the milk. The milk—which is goats'—has to be good, and the method proper.

Uncle Sam is going to undertake to teach the farmers of the country and the dairymen how to make Swiss cheese properly. A big plant is also necessary—"an anaerobic bacterium." For, really, is it the anerobic, etc., who is really the guy that puts the holes in the cheese? Meanwhile when you buy Swiss cheese, you should be sure to see that you get the full weight due you in holes.

DIXON'S graphite publications sent free upon request.



EARL COOPER
 Writes: "Never in my experience in race driving have I had a motor run more smoothly, and I can only believe that it was due to Dixon's Automobile Lubricants."
Write for "Lubricating The Motor" and Sample No. 190-G.
JOSEPH DIXON CRUCIBLE CO.,
 Jersey City, N. J.

**WHEELER GRAIN ELEVATOR, BUFFALO, N. Y.**

Buffalo is the greatest transfer market for grain in the world. Our illustration, used by courtesy of the *American Elevator and Grain Trade*, shows a characteristic house of the newer type now in operation in that city. The Wheeler elevator was built by the Monarch Engineering Company, H. R. Wait, President, and was completed in the fall of 1909. It is built of reinforced concrete and steel and is absolutely fire-proof. Its capacity is 750,000 bushels. The building is located on the Buffalo Creek Railroad, and is accessible to any railroad entering or leaving Buffalo and can handle boats of the largest draft on the Great Lakes.

The Wheeler elevator is protected from the insidious effects of grain dust and other destructive influences by Dixon's Silica-Graphite Paint. Dixon's Paint has become the standard of grain elevator owners who recognize that the cost of painting is largely decreased by using a good paint. To those who are particularly interested in the painting of grain elevators, we should like to send a letter written by the manager of a large elevator company. On his particular elevator Dixon's Silica-Graphite Paint has been used for seventeen years.

BELOW THE EQUATOR

In that beautiful city, Sao Paulo, Brazil, they are now in their second month of springtime. The climate is very pleasant the year round, the distribution of the seasons according to months being as follows:

Summer—December, January and February.

Autumn—March, April and May.

Winter—June, July and August.

Spring—September, October and November.

The warmest month is January with an average temperature of 76.46 degrees Fahrenheit on the coast (Santos) and 70.52 degrees Fahrenheit at the city of Sao Paulo. June is the coolest month, the mean temperature being 65.48 degrees Fahrenheit at Santos and 58.46 degrees Fahrenheit at Sao Paulo.

After the great canal is completed, those of us who have the price can follow the seasons and have our choice of either the east or west coast of South America.

DIXON'S graphite publications sent free upon request.



THE WILSON BUILDING, NEW YORK CITY

The Wilson Building, of New York City, occupies a prominent position on that much talked of thoroughfare, "the great white way." Its location is at the southeast corner of Broadway and Thirty-third Street.

The Wilson Building was erected for the late Mr. George B. Wilson of Philadelphia, after the plans of Messrs. Rouse & Goldstone. Our illustration above is a reproduction of a drawing made by this well known firm of architects and gives an accurate as well as artistic impression of the Wilson Building.

The 1300 tons of steel required for the superstructure of the Wilson Building were contracted for by Post & McCord and painted with Dixon's Silica-Graphite Paint. The Wilson Building is but one of the many prominent metropolitan structures included in our latest edition of the "Notable Building List." We should like to send you a copy of this booklet.

DIXON's graphite publications sent free upon request.

WITH A DIXON'S

The small girl was at the table drawing, and her mother asked her what the picture was to be.

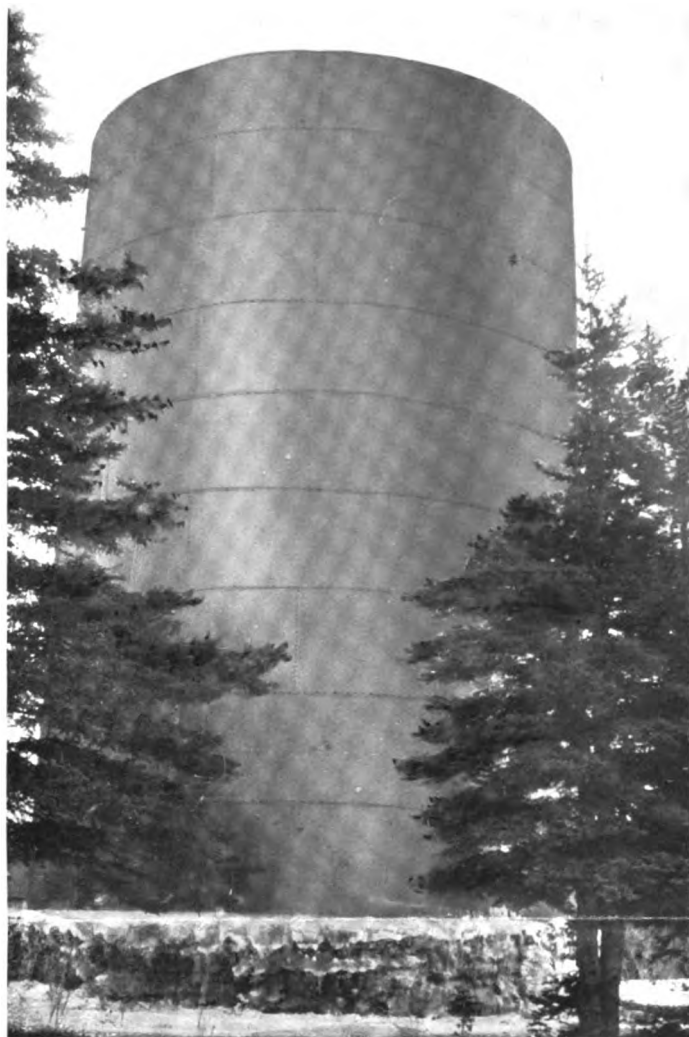
"God," replied the child simply.

"But you can't draw God," protested the mother, "because you have never seen Him; no one has ever seen Him and no one knows what He looks like."

The small girl licked her pencil and put in another touch. "They'll all know when I finish this," she said simply.

WHILE touching elbows with another visitor at the zoo, we heard him say, "That looks very much like a Kidang." We were very curious to know what the Kidang was, so when we arrived home we sought our Standard Dictionary and found that Kidang was "same as Kejang." Then it was necessary to look up the word Kejang. On looking that word up we found that a Kejang was simply "a Muntjac; sometimes called a Mintjak, at other times a Muntjack or Muntjak."

Just what a "Kidang" is you will find by looking a little further in the same dictionary under "Kejang."



STANDPIPE AT BOOTHBAY HARBOR, MAINE

Mark Twain said: "I have counted one hundred and thirty-six different kinds of New England weather inside of four and twenty hours."

"Old Probabilities" has a mighty reputation for accurate prophecy, and thoroughly well deserves it but he can't any more tell about New England weather than he can tell how many presidents of the United States there are going to be. He mulls over it and by and by he gets out something about like this: "Probably northeast to southwest winds, varying to the southward and westward and eastward and points between; high and low barometer, sweeping around from place to place; probable areas of rain, snow, hail and drought, succeeded or preceded by earthquakes, with thunder and lightning." Then he jots down this postscript from his wandering mind, to cover accidents: "But it is possible that the program may be wholly changed in the meantime."

After reading the above our readers will appreciate why we are glad to reproduce a photograph of the standpipe at Boothbay Harbor, Me., showing the appearance of Dixon's Silica-Graphite Paint.

This photograph was expressly taken to show the ice and frost on the outside, pointing out the severe conditions to which the paint on this standpipe is subjected. In addition to this the standpipe has to withstand the hot sun and rain storms of

summer and sleet storms of winter and the salt air for which throughout the year Boothbay Harbor is famous.

The standpipe at Boothbay Harbor is of course protected with Dixon's Silica-Graphite Paint and we urge the use of the same material for the protection of all metal surfaces subjected to similar conditions. We have strong testimonials from many who have tested the superior lasting qualities of Dixon's Paint. In our booklet, "Standpipe Painting," we reproduce illustrations and short descriptions of several standpipes. A copy of this booklet will be gladly sent free to anyone upon request.

A LETTER FROM MEXICO

There is scarcely any part of the civilized world in which one or more of Dixon's Graphite Products are not used. The correspondence that necessarily results from such an immense distribution affords an interesting reflection of what is going on in the outside world. The Dixon Company often obtains a clearer vision and a better knowledge of the things that interfere with the natural course of business than do the newspapers with the aid of the associated press.

The newspapers recently declared that the Mexican disturbances were practically settled, though from the following letters and others we judge that the situation is having a relapse:

VILLA ESCOBEDO, CHIH., MEXICO, July 30, 1912.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—Our local post office has been closed since the revolution swept over this state and we have just been able to obtain mail delivery through the head district office.

We were forced to close down during the early part of March due to the revolutionists tearing up the railroads and our resultant inability in procuring fuel and other materials.

All the banks in the district are still closed but the prospects of their opening at an early date are very favorable.

The railroads are now operating from this point south and we look for an early resumption of normal conditions.

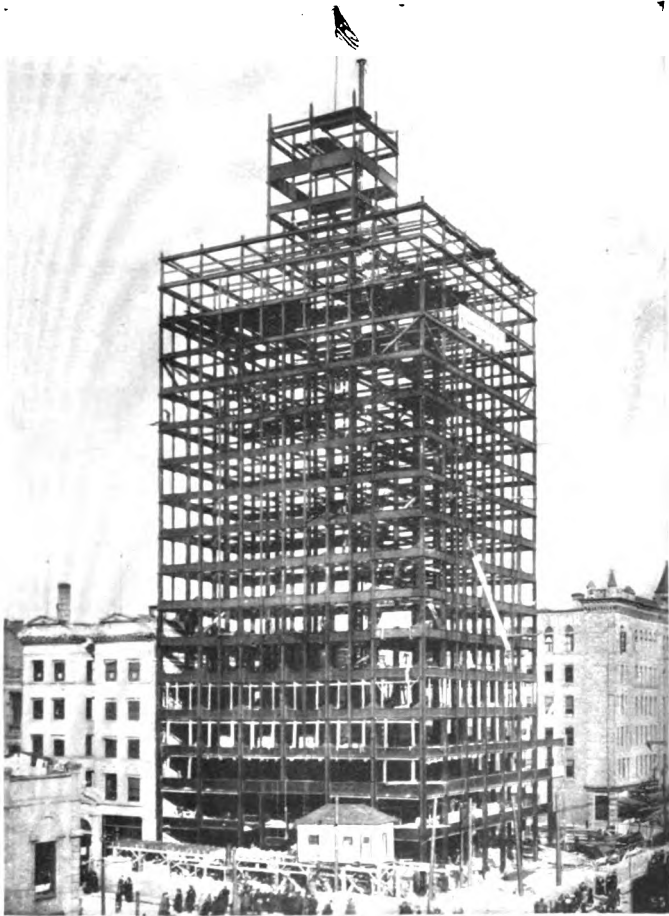
Very truly yours,

THE USES OF OLD ROPE

Old rope, like old tin cans and other things generally considered as waste, has its special market and uses, and in every seaport the collecting and classifying of old rope is an important business. Rope covered with heavy applications of tar or graphite is even more valuable today for making oakum than lightly tarred material, while hemp rope with the original heavy coating of tar worn off by weathering is often used for bag paper. A small percentage of untarred hemp rope, used in its prime for hoisting and other such purposes, is being converted into cigarette paper in Europe. Scraps and waste from old tarred rope, and also old oakum removed from the seams of ships, are now used for making boards.

—*The Blacksmith and Wheelwright.*

DIXONS graphite publications sent free upon request.



WALKER BUILDING, SALT LAKE CITY, UTAH

Our illustration represents the 1500 tons of steel work used in the construction of the Walker Building, Salt Lake City, Utah. This twenty story building was designed by the Minneapolis Steel and Machinery Company. That part of the building shown in our illustration is painted with Dixon's Silica-Graphite Paint and may be relied upon to successfully withstand the many influences that cause corrosion and other forms of deterioration.

This is one of the many buildings in our Great West, the steel work of which is protected with Dixon's Silica-Graphite Paint.

OLSONS AND JOHNSONS

George Fitch tells us that Minneapolis is the American metropolis of Norway and the greatest city in the fur coat belt of the United States. He adds that it is situated in the middle of the cleared section of Minnesota, and contains 50,000 Olsons and Johnsons and 250,000 miscellaneous citizens. English is spoken freely in all its public schools.

Minneapolis people are prosperous, progressive and hardy. They take off their winter underwear in August and put it on again in September, while bearskin overcoats are plentiful at the spring and fall baseball games. No man can be a successful Minneapolitan until he can chase street cars on snow shoes and take the cork out of a milk bottle with a corkscrew.

Speaking of the number of Johnsons in Minneapolis, Mr. Dudley Johnson, the assistant manager of the Chicago branch of the Dixon Company, on one of his trips in the Northwest attended a Masonic Lodge in St. Paul where everybody was

in uniform. He was introduced to "Mr. Johnson" about fifteen times, until he finally got off the old joke about the Johnsons being numbered, and he remarked to the fifteenth man, "Glad to meet you, Mr. Johnson. My number is 1,084. What is yours?" The man said it was 1,086, and he did not seem to relish that kind of talk, and walked away. Our Mr. Johnson asked a man standing by who that fellow was and what was his business, and he was told that he was a street car conductor. Evidently the fifteenth Mr. Johnson did not like to have his business referred to in a meeting of this kind.

ISSUE MILLIONS OF STAMPS

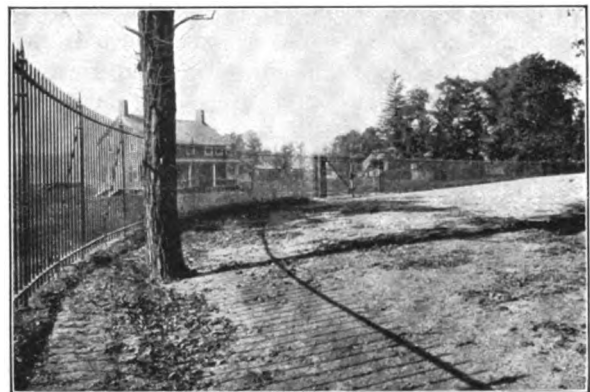
A novel method of advertising its nation-wide campaign is being used by the National One Cent Letter Postage Association which is seeking, on behalf of business men and others, a one cent letter postage rate throughout the United States.

The organization, which has thousands of members located in every state of the Union, has issued an attractive stamp or seal, and is offering these, without charge, in quantities to manufacturers, business men and others who have a large correspondence, and consequently, an extensive postage bill.

The stamps, which somewhat resemble the regular two cent postage stamp issued by the government, have across the top the motto, "Half of your letter postage is a tax!"

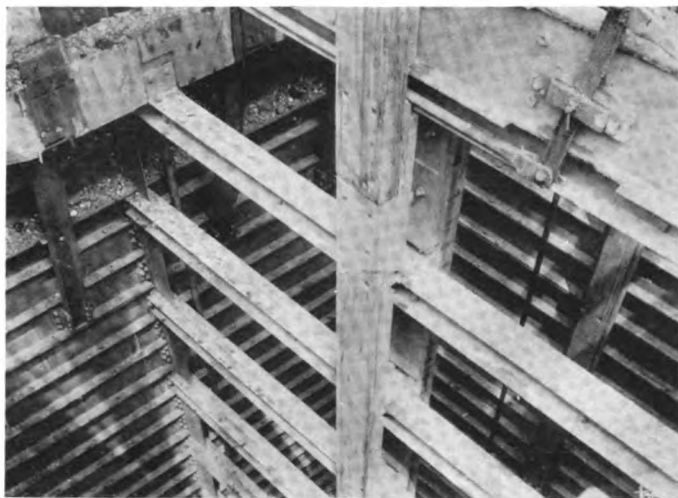
The association began issuing these stamps only a short time ago, but already has sent out millions of them, and it is expected that many millions more will be distributed during the next few weeks.

Business men are invited to write to George T. McIntosh, Secretary Treasurer of the National One Cent Letter Postage Association, 1004-5 New England Building, Cleveland, Ohio, requesting supplies of stamps as well as further information about the work.



FENCE AT BELMONT PARK RACE TRACK, L. I.

THE illustration is of the fence that surrounds the Belmont Park Race Track. Many records have been broken within this fence, and now since it has been painted with Dixon's Silica-Graphite Paint, we expect to have it establish a record of its own. Dixon's Paint possesses, besides its well known reputation for durability, an appearance that creates an impression of solidity—substantiality—that makes it peculiarly adapted to the protection of iron fences. Because of its *longer service* it saves you money in labor and material. Does this not appeal to you?



**DIXON'S PAINT PROTECTS STEEL LINING OF
MINE SHAFT FROM SULPHUR WATER**

YORK BRIDGE COMPANY,
YORK, PA.

BOYD A. MUSSER,
Contracting Agent,
Scranton, Pa.

SCRANTON, PA., June 6, 1912.

Joseph Dixon Crucible Company,

Philadelphia, Pa.

GENTLEMEN—Concerning your letter of May 20th, with reference to work done by us for the Temple Iron Company, at their Mt. Lookout Colliery, at Wyoming, Pa., desire to say as follows:

In July, 1907, we lined with steel three openings in the shaft for the Mt. Lookout Colliery, for the Temple Iron Company, at Wyoming, Pa., from the rock formation in said opening to the surface, a distance of approximately 60 feet. Photographs of this work we understand you have in your possession. At the same time we constructed a steel head frame over those openings. These openings are known as what are wet conditions, there being a continuous trickling of sulphur water over the lining of these shafts. All this work was painted with Dixon's Silica-Graphite Paint at the time of erection. Upon inquiry, we find that the steel work put in at that time has been well preserved, it showing no evidence of corrosion.

Yours respectfully,

YORK BRIDGE COMPANY,

(Signed) BOYD A. MUSSER.

NOTE—The above is one of very many similar testimonials regarding successful resistance of steel work when coated with Dixon's Silica-Graphite Paint to the injurious effects of sulphur water, dampness, corrosion, etc. If you are interested, we should be glad to correspond with you.

TRANSLATION BUREAUS

We understand that a number of prominent business men have approached the government with a view to having a translation bureau established as an aid to the extension of American trade in foreign countries.

These business men have pointed out to the high officials in Washington that the time is coming when the United States will be in the vortex of the international trade, and if the business is to be done direct, without the intervention of other countries better equipped, attention must be given to the need of translation bureaus.

There are in London several such bureaus which boast that their translators can correctly render into English the language of any country that is, so to speak, within the pale of civilization.

The translators attached to these bureaus are men who have mastered the principles underlying the trade practices and regulations of the countries with whose language they have intimate acquaintance and are competent to make perfectly clear any points which might baffle a university professor who possessed their linguistic ability, but who lacked their knowledge of commercial procedure.

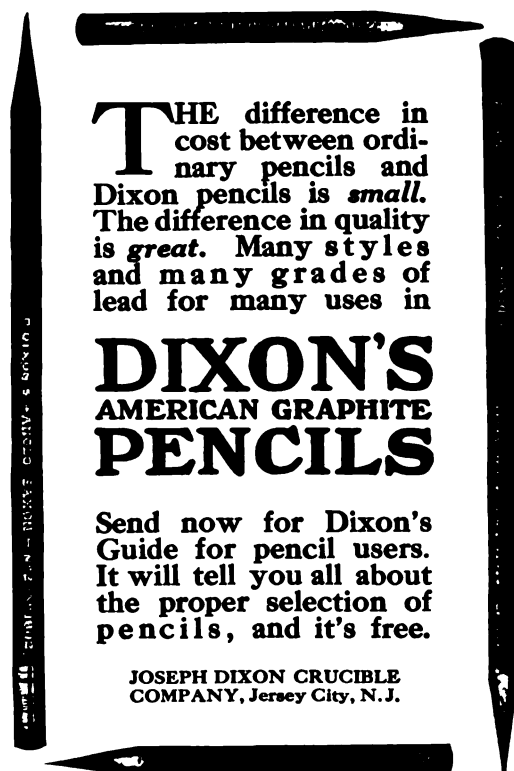
The ability to translate readily and correctly, it is said, will be found to be a money-making asset in the commercial or financial expansion of the country.

THE editor of one of the leading papers in Florida sent us \$1.00 and writes:

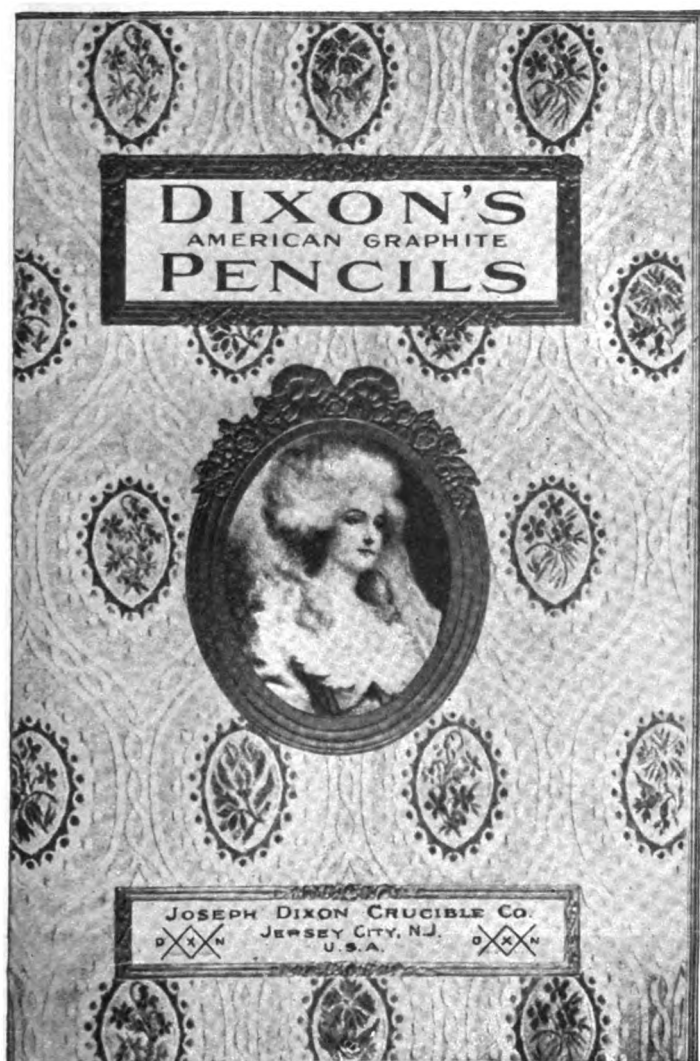
"Enclosed find check for \$1.00 for which please send me its worth in Dixon's Special Black Pencils No. 312. I would not use any other pencil if I could get a Dixon No. 312."

WHAT'S IN GRAPHITE

A facetious correspondent inquires "who puts the "fight" in graphite?" We naturally suppose that it is due to the thin, tough unctuous flakes. As to the "graft" we must refer our correspondent to some of our esteemed competitors. Engineering papers please copy.



JOSEPH DIXON CRUCIBLE
COMPANY, Jersey City, N. J.



NEW DIXON PENCIL CATALOG

The above is a reproduction made from the cover of our new pencil catalog. The 1912 edition contains many illustrations and descriptions of new Dixon Pencils, Crayons, Erasers, etc. A copy should be in the hands of every progressive stationer, and although we have endeavored to accomplish this, and so far as we know all stationers are equipped to order from this new catalog, we may have overlooked some. If so, we shall be glad to send them copies of this handsomely illustrated, up-to-date book.

A PENCIL SHARPENER PROTEST

The fact that the Rock Island Railroad Company has placed a ban on pencil sharpeners has resulted in a loud protest from trade magazines who side with the manufacturers of sharpeners.

The Office Outfitter has the following to say on the subject: "The statement is made that about 325,000 pencils have been used yearly, at the cost of about \$6,000, and that when the sharpeners are ousted this amount can be cut in two.

"The Rock Island Company employs approximately 40,000 people, all of whom are required to make reports and perform other clerical duties necessitating the use of a pencil. It is but reasonable to expect 5,000 of these employees to use one pencil every two weeks, 10,000 one pencil every month, 5,000

one pencil every two months, and 20,000 one pencil every three months. This is a total of 380,000 pencils per year and it would therefore appear that the Rock Island's pencil bill is not excessive.

"At any rate, we believe the man who advocates discontinuing the use of pencil sharpeners in a big, busy office can be likened to the old citizen who wanted to build high stone walls on each side of the first railroad tracks.

"Possibly a small saving in pencils could be effected by discarding the sharpeners, but what about the time of book-keepers, accountants, clerks and stenographers? Has our railroad friend taken this factor into consideration? It does not take long for 10,000 office employees to waste \$6,000 in money."

The Bourse sees in the above no scientific answer to the action of the Rock Island Company.—*The Efficiency Magazine*.

A "MARATHON" RECORD

This year has been notable for American victories in Olympic sports. America lost only one important race, the "Marathon" at Stockholm, but Dixon's Silica-Graphite Paint has certainly won a "Marathon" long distance record in the following testimonial which we are permitted to reproduce.

It is from Mr. J. J. Edwards of the well known Central Pharmacy at Bay Shore, New York, and is dated July 6, 1912.

CENTRAL PHARMACY,

BAY SHORE, N. Y.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—About twenty years ago I used Dixon's Silica-Graphite Paint for my roof. I have just examined the roof and have decided to paint it for the first time since using your paint, having found there is still some of it in evidence. I now want enough to cover about 1400 square feet.

Very truly,

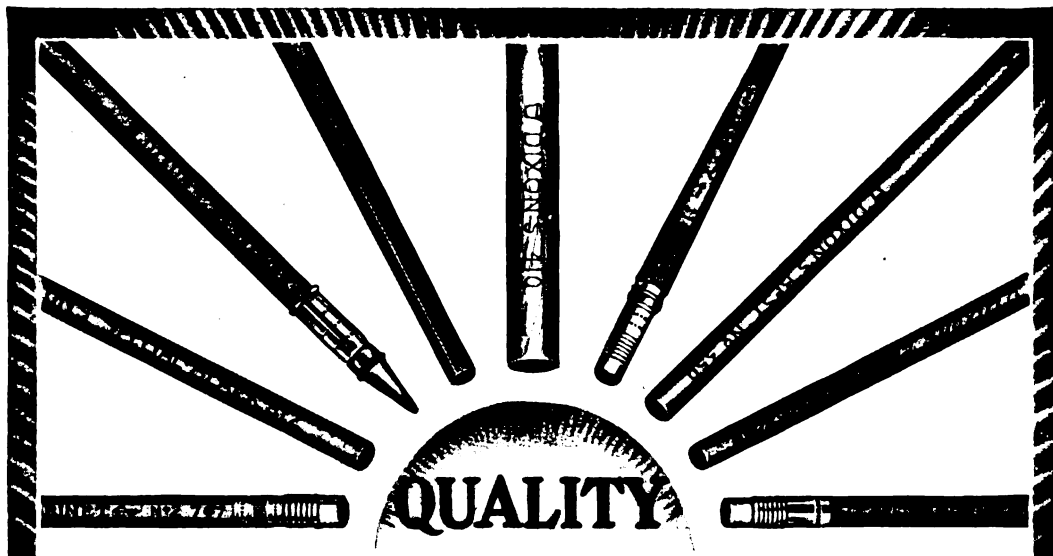
(Signed) J. J. EDWARDS.

IS A LOBSTER AN ANIMAL?

Philadelphia experts have been discussing the question not whether flake graphite is better than amorphous graphite or vice versa, but whether a lobster is an animal. Even a Philadelphia lawyer could not decide whether a lobster was an animal or not; therefore, the case involving that question was postponed until a sufficient number of expert witnesses could decide the question.

The charge was made by an agent of the Women's Society for the Prevention of Cruelty to Animals, because the chef of a well known restaurant placed a wooden peg or spike in the first joint back of the claw of a lobster on exhibition in the window of the café. According to the lawyer engaged by the chef to defend him, the "spiking" of lobsters is common practice to keep them from snapping.

The magistrate at first decided that a lobster was not an animal and that there was no law against cruelty to lobsters. The women would not let the matter drop and after a very warm argument the result was postponed as stated above.



All Dixon Pencils Centre on Quality

The name Dixon on a lead pencil defines quality—always has, and always will. Every inch of materials is quality, and every mechanical motion spells care and knowledge. The "good enough" sort doesn't happen in the Dixon works. Every Dixon product must be the best that skill and good work can fashion, from first to last.

DIXON'S AMERICAN GRAPHITE PENCILS

are made for every conceivable purpose, in many degrees of hardness or softness. They sharpen easily because the cedar is without knots or flaws. The leads don't act mean—don't break without help, don't smut or smudge; never scratch. For fine drawing, smooth writing or rough checking, use Dixon's Pencils—they're *fine*.

Send right off for Dixon's Guide
for Pencil Users. Tells the proper
sort for every purpose. No charge.

JOSEPH DIXON CRUCIBLE COMPANY
Jersey City New Jersey

GRAPHITE

VOL. XIV.

NOVEMBER, 1912.

No. 11.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

GRAPHITE IN BOILERS

There have been too many cases of the successful use of graphite for the prevention and removal of scale, and the avoidance of pitting in boilers, to leave its usefulness for this purpose longer open to debate. There may be differences of opinion as to why it does it, and how it does it, but in numerous cases the feeding of graphite into a boiler has not only prevented the formation of new scale, but has removed large quantities of scale already accumulated.

It is doubtless true that in some cases graphite has been tried without success. It may be that graphite, like most other things, has its limitations, that it is very good in some cases and not in others. It may be due also to the kind of graphite used and how it was applied.

The action is probably a mechanical one. The presence of the graphite in the scale destroys the adhesion of the particles which would otherwise weld themselves solidly together, so that the scale either does not form, or is easily broken up by the disturbances incidental to the ordinary operation of the boiler. But it is essential that the right kind of graphite should be used. One is apt to think that, while nothing but the most refined product is fit for a bearing, anything will do for so crude a process as mixing with boiler scale to make it brittle. The crudest product of the graphite companies, such as is sold to foundries for facing molds, etc., is therefore used, with the consequence that a lot of the worst kind of scale-producing material is deliberately pumped into the boiler and not enough real graphite to counteract its effect, combined with that of the scale-forming material already present.

It is no proof of the adaptability of a graphite to the purpose in hand that it is high in carbon. Coal is carbon, so is sugar, but they would not do. The graphite must be not only pure, free from sand and other foreign substances, but it must have the lubricating and preservative properties upon which its action in the boiler evidently depends.

We shall be glad to have accounts of *bona fide* instances of the use or attempted use of graphite in boilers, and the results obtained, with enough of the conditions and attendant circumstances to indicate to others who desire to try the experiment the best way to proceed.—*Power*, September 17, 1912.

We have published for years (in GRAPHITE and our other

publications) many testimonials from engineers relative to the good results with flake graphite in boilers to make scale removal easy and we want to call particular attention to what *Power* says concerning the right kind of graphite for this important work.

The action of graphite in boilers is purely a mechanical one and so the grade used must be one that will not have a tendency to pack and collect in one place, but rather one which will spread out evenly over the whole boiler surface. The Dixon Ticonderoga Flake Graphite is well known for its ability to stay placed upon metal surfaces and has been found best adapted for boiler requirements.

Detailed information as to use, etc., will be gladly furnished upon request.

SAVING THE PENNIES

Louis D. Brandeis would probably be highly gratified at the results of an efficiency experiment recently carried out by the Lackawanna Railroad. On a big super-heater engine of the Pacific type, which hauls the Lackawanna Limited between Scranton and New York, the company tried out a device for automatically supplying graphite to the cylinders. Records made during the test indicated a consumption of 12.37 pounds of coal per car mile without the graphite and 11.43 pounds with it, or a saving of 7.7 per cent in fuel. Based on the company's coal bills for the past year, this seems to point the way to an annual saving of \$260,000.

—*New York Times*, October 16, 1912.

PURITY OF GRAPHITE

We desire to call particular attention to an article from *Power*, "Graphite in Boilers," and hope that all GRAPHITE readers will carefully note it.

Power hits the nail on the head concerning graphite, in the statement, "It is no proof of the adaptability of a graphite to the purpose in hand that it is high in carbon. Coal is carbon, so is sugar, but they would not do. The graphite must be not only pure, free from sand and other foreign substances, but it must have the lubricating and preservative properties upon which its action in the boiler evidently depends," and what is said about graphite in boilers applies equally well for other work, especially for lubricating purposes. In other words, select a graphite for the work intended and one put up by a reliable and responsible concern.

DIXON'S graphite publications sent free upon request.

ESTABLISHED 1827



INCORPORATED 1868



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

OFFICERS:

President—GEORGE T. SMITH
Vice President—GEORGE E. LONG
Secretary—HARRY DAILEY
Treasurer—J. H. SCHERMERHORN
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 BALTIMORE OFFICE, 1005 Union Trust Building.
 BUFFALO OFFICE, 72 Erie County Savings Bank Building.
 ATLANTA OFFICE, Fourth National Bank Building.

EUROPEAN AGENTS,

Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

CHANGES IN THE OFFICERS AND BOARD OF DIRECTORS OF THE JOSEPH DIXON CRUCIBLE COMPANY

At the regular monthly meeting of the Board of Directors of the Joseph Dixon Crucible Co., held Monday, October 21, the following changes in the Officers and Board of Directors were made on account of the death of Vice President William H. Corbin.

Mr. George E. Long, former treasurer, was elected vice president to succeed Mr. Corbin; Mr. J. H. Schermerhorn, former assistant secretary and assistant treasurer, was elected to membership in the Board of Directors and treasurer of the company. Mr. Albert Norris was elected to the office of assistant secretary and assistant treasurer.

GRAPHITE, THE GREAT LUBRICANT

Graphite is coming into its own as a lubricant. Unlike Duluth, the fair city at the head of the Great Lakes, whose name Proctor Knott describes as "slipping off the tongue," the name of graphite is harsh, suggesting just the opposite to its smooth qualities. Like Duluth, however, it had its early struggles for recognition and is only now fairly on its way to the place among the smooth things in creation to which it is entitled.

The rise to position which this humble non-metallic mineral is now enjoying is due largely to the requirements of the scientific advancement in steam propulsion. From the little old locomotive, which in times past crawled along the steel rails, to the great modern superheater capable of great speed and with great hauling power is a far cry. Likewise there are not only steps but leaps from the long snouted oil can, which the old time locomotive engineer depended upon for oiling up the creaking joints of the iron horse, to the modern automatic feed of lubricants to all parts of the big present day locomotive.

It is, however, the unusual high temperature of the steam used in the new big engines, calling for a lubricant which does not easily volatilize, which gives to graphite its growing importance. There is more power in the superheated steam and quicker action in the modern slide valve cylinder motion. To lubricate a surface such as the inside of a cylinder of these new locomotives, constantly in contact with steam having a temperature of more than 600 degrees, is difficult and costly for petroleum products, except with the assistance of a substance like graphite, which will not "burn off."

Another cause for the increasing use of the mineral is the vast number of automobiles. Every automobile supply house and garage handles graphite in various forms, from powder, paste or liquid to solid sticks.

While different in appearance and formation, it is a matter of discussion among scientists whether coal, petroleum and graphite are not of the same vegetable origin. Petroleum is described as a hydro-carbon. Coal is basically a carbon. Merrill in *The Non-Metallic Minerals* says, "Chemically graphite is nearly pure carbon." Merrill also says of graphite, "Its most characteristic features are its softness, greasy feeling and property of soiling everything with which it comes in contact."—*New York Sun*.

TORCH LIGHT PROCESSIONS

At this time of the election year in the old days everything was torch light procession, but today the torch light procession is as dead as great many of other old time joys.

In the old days a torch light procession consisted of all the patriots that could be gotten together, each one bearing a tin torch stuck in a long wooden handle. As the living serpent of flame wound down the street at night, emitting frantic whoops at intervals, the women stood on the sidewalks and cheered, and after we had exhausted our whooping powers and were tired out, we all gathered in the park or in the church or somewhere and filled up with coffee and cakes and sandwiches prepared by the sympathetic women who had not the faintest ideas of being suffragettes, and who did not even want to march. Oh, for the good old days in some respects! They were a joy that still leaves a pleasant taste in our mouths.



BRIDGE AT FAYETTEVILLE, N. C.

Fayetteville is one of the most interesting places historically in North Carolina. It was the home of the famous Scottish heroine, Flora McDonald, who left Scotland because her efforts to assist Prince Charlie in gaining the throne of England were not appreciated by the reigning monarch of that country. It was Flora McDonald who disguised the Prince after the defeat of Culloden and enabled him to escape to France. The ruins of Flora's old home may still be seen on the banks of Cross Creek.

Across the Cape Fear River at Fayetteville, a bridge was burned by confederate soldiers in order to hinder the progress of General Sherman when he marched on Fayetteville to destroy the arsenal then located there. Near this bridge was signed the Liberty Point Declaration of Independence on June 20, 1775. In 1909 the bridge built to replace this old structure suffered the same fate as its predecessor, though from natural causes, and another bridge was erected by the Owego Bridge Company, upon the old original pillars made of brick shell filled with hot resin.

The present structure is a four span bridge, 800 feet long and painted with Dixon's Silica-Graphite Paint. It is not likely to be destroyed by fire again, because as our illustration shows, the construction is of steel and, incidentally, Dixon's Silica-Graphite Paint is noted for its ability to resist heat, as well as corrosion from weather.

DIXON GRAPHITE AIR BRAKE AND TRIPLE VALVE GREASE USED FOR RAILROAD SIGNAL MECHANISM

We have received the following very interesting letter from a prominent signal engineer, in regard to the use of Dixon's Graphite Air Brake and Triple Valve Grease by his railroad.

"Referring to the sample of Dixon's Triple Valve Grease which your Mr. H. W. Chase sent us some time since, and several hundred pounds of which we subsequently purchased, we beg to advise that we have been using this grease in our switch and signal cylinders at our electro-pneumatic interlocking plants and we find the same far superior to the vaseline which we were previously using for this purpose.

"Trusting this may be of interest to you, I am,"

Dixon's Graphite Air Brake and Triple Valve Grease is unaffected through a very wide range of climatic conditions, and when once used is invariably adopted as a standard.

GERMANY AND SOUTH AMERICA

We are told through the daily papers that it is the paramount duty of Germans in Brazil to interest themselves more in the domestic politics of the country, particularly with a view to "combating the North American trade policy and the North American conception of the Monroe Doctrine."

South America and its political and commercial possibilities for Germany have never occupied more attention than at the present moment. The following is a quotation from a recent editorial article in *La Union* of Valparaiso, discussing the gradual Germanization of Chile:

"From north to south there are threads which are binding us closer and closer to the gigantic German Empire. German banks have attained an extraordinarily strong development among us, and now dominate the money market.

"The leading import houses, the electric light and power plants, education in the public schools, the seminaries, and the army, the saltpeter refineries and steamship companies are all either in German hands or under German influence. German shippers are pushing harder and harder the English companies, which long held undisputed sway.

"The German invasion, however, has by no means come to an end. Capital for converting the Chilean debt is on deposit with three German banks. A German corporation is seeking to obtain a concession for electrifying the state railroad system in order to acquire a monopoly of the electric power supply in the zone between Santiago, Valparaiso and Maipo. The German spider in Chile is spinning a firm and invulnerable net with skill, patience and prudence which are truly remarkable, but which make the invincible progress of Pan-Germanism throughout the world entirely clear."

A NEW PLAY, PRAISING DIXON'S, OF COURSE

The new Pinero play running at the Lyceum Theatre, New York, with the bewitchingly beautiful Miss Billie Burke as the star, has a popular chorus, a propos of Dixon's Silica-Graphite Paint. Everybody is singing it. Here it is.

Mind the paint; mind the paint!

No matter whether the bills are settled or they ain't;

Once you smear it or you scratch it,

It's impossible elsewhere to match it;

So please take care of the paint.

Mind the paint; mind the paint!

A girl is not a sinner just because she ain't a saint;

But my heart shall hold you dearer—

You may come a little nearer—

If you'll only mind the paint.

This is the song of the day, and Dixon's Silica-Graphite Paint is the paint of the season.

What about fall painting of your steel structures?

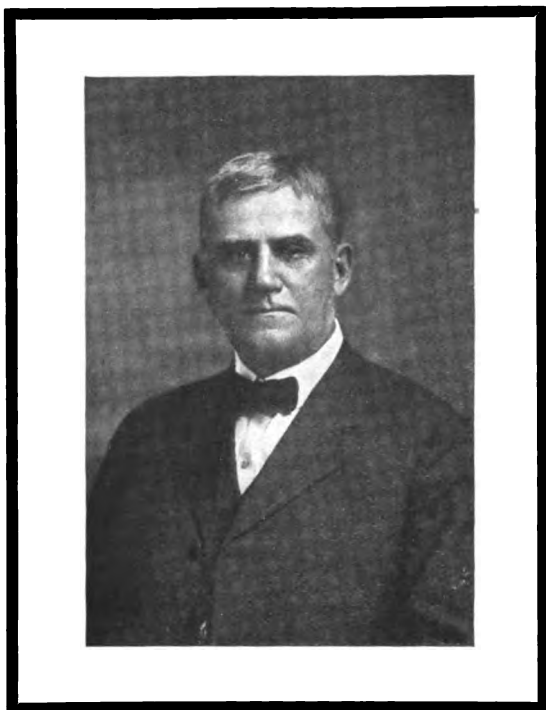
DISCRETION IS —, ETC.

Teacher—"Johnny, what would you do if another boy called you a story teller?"

Johnny—"To my face?"

Teacher—"Yes."

Johnny—"About how big a boy?"



WILLIAM H. CORBIN

It is with deep regret that the Dixon Company records the death of William Horace Corbin, for, apart from his personal friendships with many members of the Dixon Company, his death not only deprives the company of an officer and director but of the services and wise counsel of a distinguished lawyer.

Mr. Corbin died a little before 7 A. M., on September 25, at his country home at the Hartwood Club, Sullivan County, New York, after an illness of several weeks. His death was due primarily to hardening of the arteries, caused by overwork. The immediate cause of death was inability of his heart to stand the strain of the abnormal blood pressure to which he was subjected.

His family were all present at the time of his death.

He was born in McDonough, Chenango County, N. Y., July 12, 1851, being a son of Eli L. Corbin and Abigail (Taintor) Corbin. He was educated at Cornell University and the Columbia College Law School, from which he was graduated in 1872 and admitted to the New York bar. He came to Jersey City, where his older brother, Charles L. Corbin, had already settled, and was admitted to the New Jersey bar in 1874. He took up his residence, however, in the city of Elizabeth, where he has ever since retained it. For several years he was the managing clerk of Senator Brinkerhoff, but in 1881 became a member of the firm of Collins & Corbin, which had been formed in 1875 by his brother, Charles and Gilbert Collins. That partnership, except for the time that Mr. Collins was on the Supreme Court bench from 1897 to 1903, continued until the death of Charles L. Corbin in August, 1911, the firm, however, continuing with various junior partners admitted from time to time until now.

Mr. Corbin was School Commissioner in Elizabeth and from 1885 to 1887 a member of the New Jersey Assembly; New Jersey State Commissioner to erect Gettysburg Monuments, 1886 to 1890; Councilman of Elizabeth, 1890 to 1895. It was largely due to his efforts in that capacity that the contract between the two railroad companies and the city which re-

sulted in the abolition of the dangerous grade crossing of the Pennsylvania and Central Railroads and Broad Street and other grade crossings in Elizabeth was effected.

He was counsel to the Senate Investigating Committee that inquired into the ballot box frauds in 1889, resulting in the conviction of many election officers; counsel for the Senate Committee that investigated the frauds in State House supplies and the counsel in the insurance investigation and other legislative commissions of 1895. He was one of the revisers of the general Corporation Act of 1896, and the author of an annotated edition of that law which has been revised and continued at short intervals until now.

He helped to organize the New Jersey Title Guarantee & Trust Company, and has been one of its directors from the beginning, and for the last few years its president. Admonished that he had been working too assiduously he asked to be relieved from the active duties of the presidency and two vice presidents were recently elected. He was a director of the First National Bank of Jersey City and other corporations. He was a member of the Union League Club of New York, the Union League Club of Hudson County, the Lawyers Club and the Railroad Club of New York, the Town and Country Club of Elizabeth and the Carteret Club of Jersey City.

Mr. Corbin was a very able lawyer as well as business man. He was especially versed in corporation law and the law of waters, and was an expert in matters of railroad taxation.

Mr. Corbin compiled several works on corporation laws. In 1881, he published a pamphlet edition of the New Jersey corporation act with notes and forms. A second edition of the book was printed in 1882 and a third in 1883. In 1882, Mr. Corbin published another volume under the title of "Corbin's Forms," which was a book of precedents for legal draughtsmen and of procedure under the New Jersey statutes. Mr. Corbin was one of a commission appointed to revise the corporation laws of the State and the result of this work became the model for the corporation laws of several other states.

Mr. Corbin socially was a genial and pleasant companion. He was a deeply religious man and long an elder in the Westminster Presbyterian Church in Elizabeth and a member of the Board of Home Missions of the Presbyterian Church. Mr. Corbin married Miss Clementine Kellogg, daughter of the late Elijah Kellogg of Elizabeth. He is survived by his widow and two sons, Clement K. Corbin, who is a member of the firm of Collins & Corbin, and Horace K. Corbin, who is an engineering contractor.

The Jersey Journal published the following tribute to the memory of Mr. Corbin:

"William H. Corbin's death comes as a shock to the community. To all who had personal relations with him it causes a sense of loss. He was looked up to and respected by all who knew him. He touched life at so many angles that thousands will feel a personal sense of something good gone from their existence.

"As a lawyer Mr. Corbin was one of the leaders at the bar in this state, though his reputatiaton was not confined to New Jersey. As a statesman he stood on a high plane and his word carried weight. As a financier he was successful, though conservative. As a citizen, church member, family man, he was a model of uprightness. His death severs many charming and uplifting associations.

"In Jersey City, where his business life was spent for more than a generation, Mr. Corbin was a tower of strength for any cause he espoused, and in Elizabeth, where he lived and served the city in many ways, he was so thoroughly identified with good works that the people looked upon him as their own. He monumented his career with gracious deeds, and the people accorded him the credit with pleasure.

"In spite of the demands on his time made by good works he was diligent in business and leaves a competence for his family, besides the heritage of a good name and the sympathy of the entire community."

A LESSON FROM THE TITANIC DISASTER

Mr. Roger W. Babson asks us if the Titanic disaster did not prove conclusively that man can attain the highest point of unselfishness—that even much more than the Golden Rule may be exhibited in actual business? In other words, the unselfishness of the men and women on that sinking ship, the voluntary leveling of the rich and the poor, the absolute defiance of the law of the survival of the fittest,—all of these recorded facts make him wonder if we are not entering a new era. May not April 15, 1912, be the beginning of a new civilization, in which the greatest honor will come through serving instead of through ruling; in which men will strive to be loved instead of to be rich? These thoughts may in a sense be regarded as Utopian, but the old injunction, "it is more blessed to give than to receive" contains a fundamental and unchangeable law, as absolute as the law of gravitation and a law which no man can disregard with impunity. In short, when the rich begin to realize that Mr. Astor did more for his family name in that last hour than all his riches and relatives have ever accomplished; when our armies and navies understand that Major Butt, quietly wrapping robes about the women, lifting his hat as they rowed away, with his brave "Remember me to the folks at home," became far more famous than would be possible through the taking of any city or the routing of any army—then our great problems are solved. To go a step farther, is it not now possible to imagine a time in the distant future when capital and labor, manufacturer and consumer, buyer and seller may each strive to help and serve the other? Can we not imagine a time when it may be more honorable to die without great means than to die rich, and more honorable to lose than to win?

Mr. Babson tells us that of course these may be fanciful thoughts, but he cannot get them out of his mind, and he wonders if April 15, 1912, may be the beginning of a period of the world's history when men will have begun to act in daily life, in the factory, the market place, the bank and the brokerage office as they acted on the decks of the steamship Titanic?

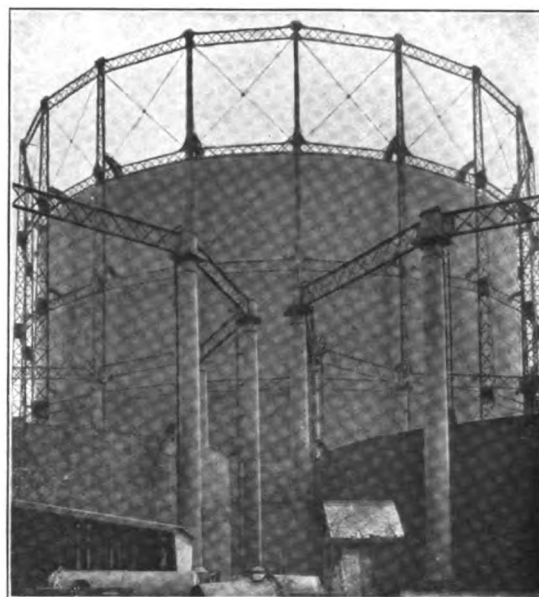
KNOWN BY HIS WORKS

WILLISTON, N. DAK., August 22, 1912.

GENTLEMEN:—Thanks for the pamphlet "Joseph Dixon a World Maker." Just as I finished reading it I was not surprised to find that the pencil with which I had cut the pages was a Dixon.

Yours truly,

S. L. SINCLAIR.



CONSUMERS' GAS COMPANY'S HOLDER,
TORONTO, CANADA

A recent piece of printed matter in the form of a blotter was distributed by the Dixon Company, showing the above illustration of the Consumers' Gas Company's gas holder.

This gas holder is protected from the attacks of gases, ice, rain, heat, brine, smoke and other corrosive agencies, with Dixon's Silica-Graphite Paint. Dixon's Paint is unrivalled for long service and consequent economy in labor and material. It is made in four colors and in only *one quality*. If you are interested in the protection of gas holders, you should write for a copy of the new artistic Dixon booklet, "Gas Holder Painting," and testimonials from many sources.

WERE YOU EVER INTOXICATED?

Those men old and young who have so frequently said that while they take a drink occasionally, and may not even be classed as moderate drinkers, but have not been intoxicated, may be surprised to learn that eminent doctors tell us that "intoxication does not necessarily mean that a man must fall in the gutter and be carried home. Any man who has imbibed sufficient alcohol to make him boastful or make him irritable, or whose ideas are stimulated, or who has slept very soundly from its effects, has been intoxicated."

Those who read the papers carefully can readily see the day coming when employment will be denied to every engineer or captain who partakes of intoxicants, and in fact, to any man who holds any position that carries with it the responsibility of human life. Furthermore, the day is coming when, to say the least, it will be very bad form for business men to indulge in any intoxicating liquor even to the smallest degree during business hours.

If a man must indulge in alcohol, it is better for him to have an occasional drunk, for the reason that during the intervals the blood current is restored to normal again, while with moderate drinkers the damaging influences of the alcohol go on indefinitely.

The recognition of the fact that moderate drinkers are more susceptible to disease than total abstainers is well exemplified by the action of underwriters for insurance.



W. & J. SLOANE BUILDING, NEW YORK CITY

This substantial structure, a picture of which is reproduced above by courtesy of *Architecture and Building*, was designed by John B. Snook Sons, architects, for the famous carpet and rug house of W. & J. Sloane and is now occupied by the latter. The building is located at the southeast corner of Fifth Avenue and 47th Street, New York City.

Between 6,000 and 8,000 tons of structural steel were used in the construction of the Sloane Building; Levering & Garrigues Company being the fabricators and C. T. Wills, Inc., the general contractors. The entire tonnage of the superstructure is protected with Dixon's Silica-Graphite Paint.

The Sloane Building is one of a great many notable New York structures painted with Dixon's Silica-Graphite Paint. A complete list of buildings in New York, as well as in other cities that are protected with Dixon's Paint, has been compiled and will be sent upon request to all interested.

DIXON's graphite publications sent free upon request.

HARD ON THE "S" BOX

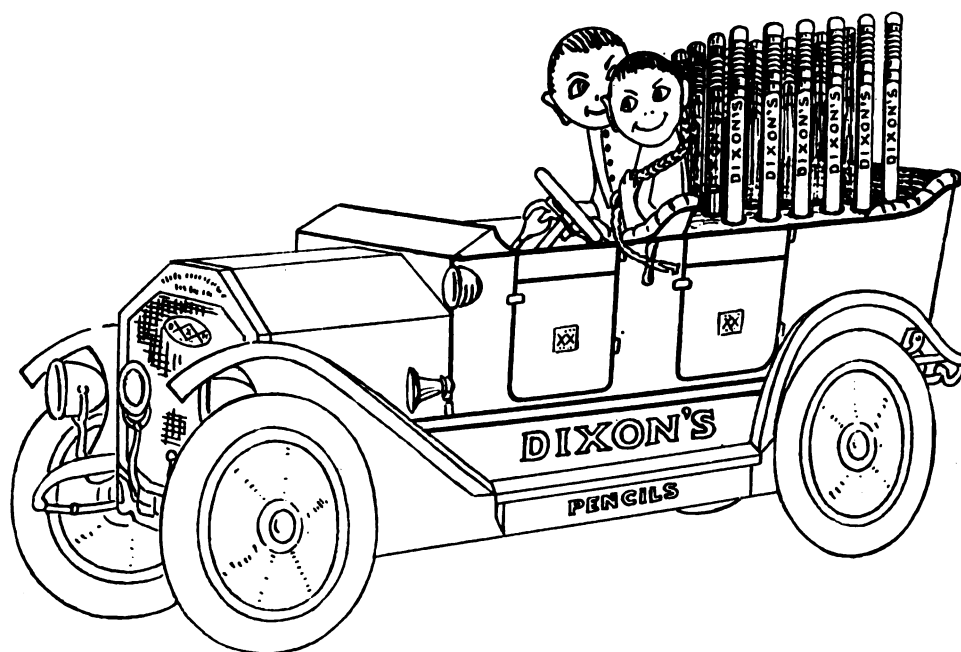
Sir Samuel Simons saw sweet Sarah Samson swimming. Suddenly she seemed sinking. Sir Samuel stood stunned. Striding seaward, spurning shingle, Sir Samuel swiftly swam Sarahward. Sir Samuel skillfully supported swooning Sarah. Swimming shoreward, Sir Samuel successfully succored Sarah. Seeming somewhat shaky, Sir Samuel sampled some spirits—special Scotch.

Sarah saw Sir Samuel's self-sacrificing spirit. Sir Samuel saw Sarah's sweetness. Sir Samuel soon sought Sarah. Striding slowly, Sarah sighed softly. Sir Samuel seemed speechless.

"Say something, Sir Samuel," said Sarah. "Say 'Sam,' Sarah," said Sir Samuel. Sarah, smiling, shyly, softly, said, 'Sam.' "Sarah—Sally," stammered Sir Samuel. "Sweet Sarah—sweetheart."

Sarah suddenly surrendered.

(Printer's remark: "Please ctot thic; we are chort of eccec.")



DIXON'S MOTOR CAR ASSORTMENT No. 1234

This will prove one of the most attractive assortment boxes on the market. The car is bright red and careful attention has been paid to its appropriate equipment.

The pencils comprise six dozen good quality in round and hexagon shapes. Finished in attractive colors, with tips and rubbers.

They are shipped flat, securely packed in individual boxes. This is a thoughtful feature, as little space is required. The adjustment to a staunch and strong box is extremely simple, although full directions are printed on the back of each car.

The price is moderate. Colored plates will be furnished on request.

DIXON'S FLAKE GRAPHITE GIVES FIRST AID

Mr. A. G. Thomson, the Dixon representative who attended the recent Milwaukee automobile races, arrived in Jersey City with an interesting narrative of an incident which occurred during his trip from Milwaukee to Chicago on the Chicago, Milwaukee and St. Paul Railway. Mr. Thomson rode on train No. 8, which left Milwaukee at 1:45 P. M. All was well until the train suddenly stopped and the passengers learned that a coach had developed a hot box. It looked like a serious delay until Mr. Thomson bethought himself of the two little phials of graphite which he carries about. The quantity looked too small to accomplish the desired effect, but the conductor and engineer welcomed the graphite as if it had been a physician's prescription. Fifteen or twenty minutes were consumed despite the earnest and energetic work of repacking. The graphite was used and the train started with the expectation that more time would be lost. Much to the surprise, however, of those who knew the serious nature of the delay, the train moved faster and faster and arrived in Chicago only five minutes late. Not only had the graphite cured the hot box but it had enabled the engineer to make up lost time.

MORAL:—Profit by the experience of thy servant.

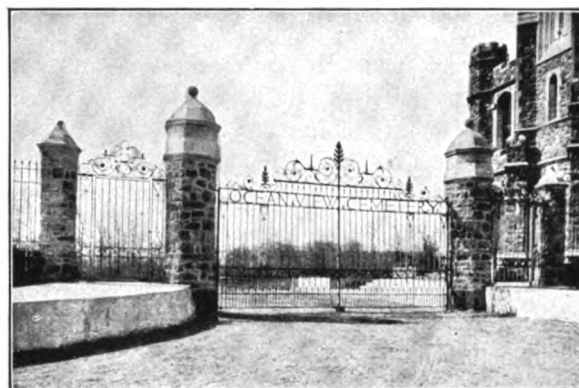
FROM A SUBSCRIBER

BROOKLYN, Oct. 8, 1912.

I enjoy GRAPHITE because it always contains some interesting facts about your products. Your article in the last number about graphite preventing scale in boilers is interesting and was a "new one" to me, and in fact each number of your publication contains a point or two worth remembering.

Thanking you for past favors, I am,

Yours very truly,



MAIN ENTRANCE, OCEAN VIEW CEMETERY,
STATEN ISLAND

The many entrances to the Ocean View Cemetery are remarkable for their ornamental gates, as may be surmised from our illustration of its main entrance. The 10,000 feet of heavy railing was furnished and erected by the F. E. Carpenter Company, the well known New York manufacturers of iron railings. This company also applied Dixon's Silica-Graphite Paint to the entire structure.

HIGH STRUNG

"Can she keep a straight front?"

"Well, she has good staying qualities."



THE FOUNDRYMEN'S CONVENTION

Buffalo was disappointed—not because the Foundrymen's Convention failed to prove interesting, for it was all of that and more too—but because it failed to live up to its reputation as a “big noise.”

Heretofore foundrymen in convention assembled have given an excellent imitation of a fleet of warships saluting a sister vessel with Fourth of July and New Year's celebrations as side-shows. This is what Buffalo looked forward to, and with the expectation of being startled out of its blase convention-al existence.

But this year foundrymen acquired a false sense of modesty and the music of molding machines, sand blasts, gas torches and furnaces was stilled and the slumber of the innocent remained undisturbed.

“This was all very sad,” explained “Dud” Johnson, a Dixon representative who craves excitement as a dope fiend craves his drug. “Next year we are going to have the convention in Chicago and conduct a wide-open place if the police don't object.”

It is estimated that the attendance at this year's convention was at least 25% greater than at any previous meeting. The immense exhibition of nearly one hundred manufacturers of foundry supplies and equipment occupied about 47,000 square feet of space in the remodeled armory building now known as the Broadway Arsenal. The method of registration was both unique and highly satisfactory and should prove a model for other conventions. As members and visitors entered the hall, each passed by a corps of girls equipped with typewriters, printed forms, ticket badges, etc. Each performed some particular part of the registration and thus, in almost

an instant the visitor's name, home, business and convention addresses and his title were recorded, a ticket bearing his own and firm's name inserted in a slot at the top of his badge, and he was provided with a sure means of identification, a way of avoiding embarrassing meetings with persons whose faces were more familiar than their names, and a souvenir of the occasion.

“I have attended hundreds of conventions,” said “Dud” Johnson, “but I do not recollect a single one with such an exceptionally fine building for the exhibitions. Everything was in one room and not a post or pillar to obstruct the view. No partitions—only a railing three feet high—separated the booths. The decorations were simple but neat. The convention hall was but a short distance from the hotel district and nearly everybody walked back and forth.

“Time and again I have heard speakers refer to the fine appearance of the stationers at their meetings but I do not think they “have anything” on the foundrymen. Many were proprietors of their own shops, others were chemists, metallurgists, mechanical engineers and men of college education and the rest were molders, melters and workmen whom you see in the foundry in overalls and covered with grime. The latter were hardly recognizable, for in appearance, conversation and in their ability to grasp the intricate mechanisms of the foundry exhibits, they were indeed a bright, clean cut and fine looking body of men.”

The entertainments were well arranged and carried out to a happy finish. One man, who feared that his wife might have to spend much of her time alone and without entertainment, expected that she would become tired and suggest that “there's no place like home.” This man, however, afterward complained that the Ladies Auxiliary kept his wife so busy

seeing the sights, that he had scarcely seen her during the convention.

The Dixon Company was well represented and incidentally honored at a luncheon given in the dining room of the Buffalo Chamber of Commerce. Upon this festive occasion, diners were startled upon picking up their menu cards to find that "Plumbago Soup *a la* Dixon" led the list of edibles. It is hardly necessary to say that the smooth quality of this dish promoted the digestibility of courses that followed.

The Dixon booth, as usual, was one of the main attractions. It was situated next to one of the most interesting features of the exhibit—the moving picture display of Rogers, Brown & Company, pig iron merchants of Cincinnati. These pictures are said to be most complete of any industrial operation, covering as they do the mining, manufacturing, handling and shipping of pig iron.

The location of the Dixon booth claimed the attention of all who passed to and from the restaurant so that the Dixon representatives were able to interest many at what is said to be the psychological moment—after a man has enjoyed his dinner.

Among the Dixon men who helped to make visitors welcome were Mr. J. A. Condit, manager of the Buffalo Dixon Office and in charge of the Dixon Booth; Messrs. Chase and Thurston, also of the Buffalo office; "Dud" Johnson, of the Chicago office; A. L. Haasis, of the Boston office; R. F. Leonard, of the New York office and Frank Krug, of the Philadelphia office. A pleasant surprise occurred when several other members of the Dixon Clan, chiefly from the home office, dropped in upon those in faithful attendance and as one of the latter said, upon his return to Jersey City, "It seemed like a family reunion."

An interesting feature of the Dixon Booth was the presence of three baby alligators from the cedar land of Florida, which also furnishes the wood for the cedar casings of Dixon's Pencils. Mr. Haasis irreverently named the trio after the leading presidential candidates and they were thereafter called by name. "Dud" Thurston's suggestion that the candidates be kept in Florida water was received in dead silence. Our illustration shows Messrs. Krug, Haasis, Johnson, Condit, Thurston and Leonard.

Among the notables who registered at the hotels during the convention was J. P. Morgan, the financier, but according to "Dud" Johnson Mr. Morgan did not visit the Dixon Booth. Rumor has it that "Dud" planned to present a Dixon alligator to Mr. Morgan in order to find out the latter's choice of "presidential candidates." "Dud" never overlooks good opportunity to place some "easy money."

The convention which began in rainy and cold weather failed to dampen the ardor of the visitors and ended with enthusiastic assurances from all that they had had a good time and would be among those present next year.

WERE THE ONIONS PICKLED TOO?

Si was describing his boarding house in New York.

"Why," he wrote, "it was one of the most rum-soaked joints I ever stopped at; every morning the landlady's son came into the dining room with a skate on; yes sir; and one of my plates at breakfast had a bun on every morning. Why even the prunes we got were stewed—gosh-darn it!"



CANADIAN NATIONAL EXHIBITION

The Canadian National Exhibition is Canada's world-famous fair. The thousands who visited this exhibition during the latter part of last August, were impressed with the tremendous importance of the Canadian automobile industry.

So many automobile and accessory manufacturers exhibited at the fair that accommodations for all could not be obtained in the large hall known as the Transportation Building and a tent, fifty by one hundred feet, had to be erected for the overflow which, after all, was crowded. Many manufacturers failed to exhibit because of their inability to secure satisfactory accommodations.

The exhibition grounds are in Toronto, where all the large sight seeing cars are lubricated with Dixon's Automobile Lubricants and where, through the wide distribution of the Consolidated Motors, Ltd., Dixon's Automobile Lubricants are well known.

One of the most interesting exhibits at the fair was that of the Consolidated Motors, Ltd. The display of this prominent Canadian concern included a demonstration, in charge of Dudley Thurston, of Dixon's Automobile Lubricants. The illustration on this page gives an idea of the demonstration and shows the gear case that was operated during the exhibition as well as some of the placards that were used.

The demonstration proved to be an excellent method of holding the attention of the visitors and many sales were made that have since helped to convince others and create more sales in the territory covered by this progressive Canadian establishment.

ETAOIN! SHRDLU! ETAOIN!

NEW YORK, August 21.

Walenty Krutys and Karthatina Trella, William Waicekauchas and Veronica Vienckaiczutie, Andrew Ulcezzokas and Catherine Ludowicz, Walinik Vzkyxmelkrima and Madelena Pbyronzaaki, and Papelo Zryzarkuxski and Cecelie Uzkalczka are five couples who will be married in Queens borough this week. George Frenz, the license clerk, today announced himself a disciple of the simplified spelling school.

—Detroit Free Press.

FICTION VS. TRUTH

The following advertisement, which we reproduce exactly as written with the omission of names, appeared in recent issues of several engineering papers.

"It has been suggested by certain misguided souls, who are otherwise safe, sane and rational, that graphite might improve the lubricating qualities of ————— Grease.

"And so this is to warn all users of ————— Grease to disregard all such nonsense. It is perfectly ridiculous. If anybody slips up behind you when you are not looking and whispers graphite, turn around slowly, look him in the eye and wrinkle your face into a broad grin. Laugh at him; don't "fall for the bunk."

"If any substance other than pure petroleum were necessary to the manufacture of a TRUE lubricant, we would put it in ————— Grease ourselves; but we have demonstrated by every known test that such inferior substances as graphite, resin, resinous oils, talc, clay, wax, tallow or other animal or mineral substances are positively DELETERIOUS to perfect lubrication..

"The only excuse for putting such inferior substances in grease or oil is that they give BODY to what would otherwise be too thin to stay in the bearings.

"————— Grease has sufficient body WITHOUT the addition of any foreign matter whatever; and it is THE ONLY GREASE MANUFACTURED BY ANYBODY ANYWHERE THAT DOES NOT CONTAIN ANY FOREIGN SUBSTANCE.

"It is made in nine densities and you will find that anyone of these will give PERFECT lubrication in the particular place for which it is intended. There is no form or type of engine made on which ————— Grease will not perform to better advantage than any other known lubricant.

"We want to go on record as being decidedly opposed to such ridiculous action as mixing graphite or other inferior substances with ————— Grease. The theory that graphite is a TRUE lubricant is a fallacy, and has been exploded wherever graphite has been tested in comparison with pure petroleum grease.

"One fair and impartial test proved that ————— Grease has fourteen hundred per cent (1400%) greater efficiency than graphite, UNDER TWO HUNDRED (200%) PER CENT GREATER PRESSURE."

To which we replied as follows:

MISGUIDED SOULS

The ————— Lubricating Company in an advertisement in *Power*, September 3, say "it has been suggested by certain misguided souls who are otherwise safe, sane and rational that graphite might improve the lubricating qualities of ————— Grease."

Then in the slang of the underworld, the users of ————— Grease are told how to meet the suggestions from such misguided souls.

The world has had many misguided souls—so called. Today we are thankful for what they did and have done for us. Thirty years ago this month, Edison accomplished his work of giving to the world an incandescent lamp and at the same time a college professor was demonstrating the impossibility of such a thing.

The "misguided souls" who made the suggestion about adding graphite (if it was DIXON'S FLAKE GRAPHITE) probably KNEW from actual experiment what they were talking about.

The railroad engineer who bought DIXON'S FLAKE GRAPHITE and applied it to his oils and grease, was probably another misguided soul, but he demonstrated that it was possible to go through the grinding season without a break down or a shut down because of lubricating troubles.

Of course there is a great difference in graphite and for really satisfactory results only DIXON'S TICONDEROGA FLAKE GRAPHITE should be used. The thin flakes build up the microscopical inequalities of the bearing surfaces, making them mechanically perfect, and so enabling the oils and greases to do their best work. This is what the so called misguided souls have found out and they are spreading the glad tidings and you will do well to listen to the suggestions. In fact it will pay you.

If you want to know more about tests and what acknowledged experts have to say about real lubricating graphite, write us. We have distributed over 100,000 copies of our standard work, "GRAPHITE AS A LUBRICANT" and will be glad to send a free sample can of DIXON'S FLAKE GRAPHITE on request.

LIQUID GRAPHITE

We note with much interest what a contemporary says under the heading, "Liquid Graphite."

Any graphite which we have seen is a solid. The same contemporary has preached a great deal about the high carbon contents of his graphite. We don't see how it is possible to convert practically pure carbon, a solid, into a liquid. This reminds us of the old saw that you can't eat your cake and keep it too, that is, we would like to know how graphite can exist in a liquid state and still be graphite.

Stops Trouble Here

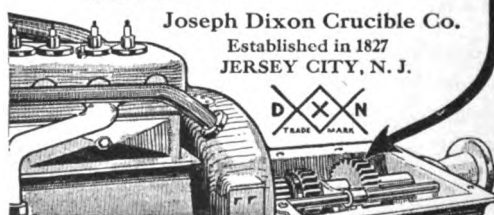
Dixon's Motor Graphite is the ideal lubricant. It produces on bearing surfaces a durable, almost frictionless veneer that prevents metallic contact, cutting and seizing.

When mixed with greases it may be used in many places where its use dry is inadvisable or difficult. In such cases the grease acts as a carrier, the graphite performing the important lubricating function. Dixon's Motor Graphite mixed with highest quality of mineral greases constitute

DIXON'S Automobile Greases

Ask your dealer for No. 677 for transmissions and differentials. It is a resilient, spongy lubricant that acts as a cushion for the gear teeth. Stops the noise—prevents chipping of teeth—reduces friction.

Our free book, "Lubricating the Motor," is well worth reading. Send name and model of car.



Joseph Dixon Crucible Co.
Established in 1827
JERSEY CITY, N. J.

CASH DISCOUNTS

BY WILLIAM KOESTER

We have been interested in a recent article on this subject which states that it begins to look as though that old time institution, the Cash Discount, will have to get in readiness to defend itself. The question of its abolition is now being agitated in many trade circles. Originally the cash discount was intended as a premium allowed for the prompt use of the money. Where goods were sold on terms of from two to four months or over, the seller often found himself in a position where he could profitably use the money within ten days of the time of sale, and he offered as a premium for immediate payment, a discount which generally was at least double the amount of bank discount, so that it was profitable for the buyer, if necessary, to go to the bank, borrow the money and take the discount.

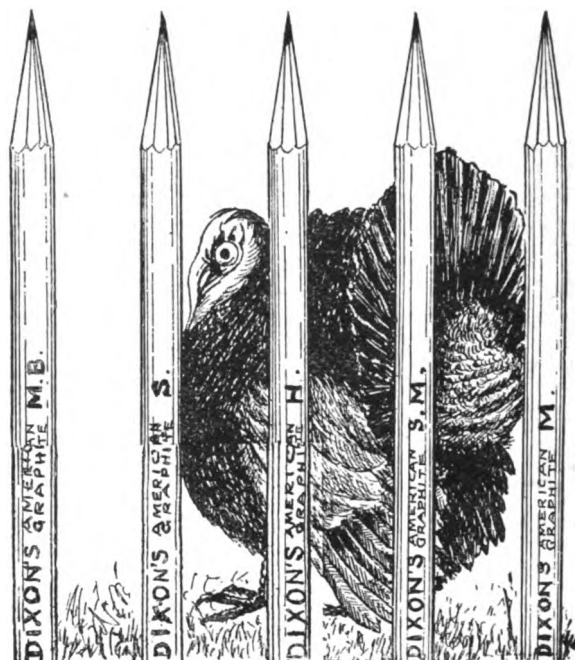
Little by little this privilege has been abused until now quite a number of buyers take the discount without observing the conditions. Some houses pay no attention to the ten days but deduct the discount if they pay the bill in twenty to thirty days, and in fact, in some cases even after the bill has matured. Others are adopting the rule of making their payments once a month, paying all the previous month's bills anywhere from the tenth to the twenty-fifth of the following month and deducting the cash discount, in fact, some buyers have printed on their order sheet a paragraph which reads: "This order is conditioned upon payment less 2% on the twentieth of the month following the time of receipt of goods." A little thought will show that it is possible for a house who puts this on their order, to so order goods that they will be shipped late in October, reach them early in November, and then they have the privilege of deducting the cash discount on the twentieth of December, very nearly sixty days after the goods have been shipped and billed. When it is considered that, on a bill of \$120.00, the interest at 6% is two cents per day, it will be seen that in this latter case a concern, buying a bill of this size, will pay, less the cash discount on December 20, a bill that under the ten day rule would have been payable say November 10, and that the seller at 6% loses sixty cents.

In a recent case which came under the writer's notice a bill of \$480.00 was bought September 5. Under the ten day rule, it would have been payable September 15. It was paid October 10, and the loss in interest in this case was \$2.00.

Some houses also attempt to deduct one or two per cent. in addition to the rate specified in the terms. While it is true that all of these items are small, the aggregate of them is so large that it is impossible to ignore the matter, and considerable correspondence is often necessary to collect the little items, and then the salesman is met with the criticism by the customer that the house is a stickler because it refused to allow the customer a few days beyond the discount period.

As a result of this agitation, many writers in trade and credit papers are recommending the total abolition of all cash discounts, suggesting that the goods be sold on thirty days time, and that if any firm desires to have a monthly pay-day and to simplify their bookkeeping by making all payments on that day, that they should pay the bills in full, and not expect the seller to allow them 2% because it is claimed that in this latter case the 2% is not a cash discount but really should

take its place among the trade discounts, for it is not longer conditioned upon prompt payment but is deducted whenever the buyer feels inclined to pay his bills.



THE TURKEY'S LAMENT

The following sounds very much like Mason's writings, but the clipping comes to us without crediting.

"I know Thanksgiving Day is almost here, and it makes me long to fly for I have reached my prime and its mighty clear that it's time for me to die. I saw the head of the house come out, and he smiled as he gazed at me and he cried aloud that there was no doubt what a comfortable meal I would be. Oh, I've got to go! It gives me a fit though it's not so much for my life I care about, but he can't carve a bit and I've got to be hacked by his wife."

WHO PUT THE PEN IN PENCILS

A man whose work necessitates the keeping of permanent records and who is compelled to move about to various places in a large business, found relief from the many petty annoyances of a fountain pen. He now uses a Dixon's Eterno Copying Pencil for much of his work and at times, when a slightly harder grade of lead seems desirable, a Dixon's Endurance Pencil.

His appreciation of these two popular Dixon pencils is as expressive as it is convincing, for, in part, he wrote: "I now know that Dixon's Eterno and Dixon's Endurance are the guys who put the pen in pencils."

Stationery papers please copy.

ACCOMPLISHMENTS

Dear old Lady (with a view to a little moral teaching)—
"Now, do either of you little boys say naughty words?"

Elder Brother—"Well, mum, I ain't much of a 'and at it myself, but young Bill 'ere 'es a treat. Cuss a bit for the lady, Bill."

CRUCIBLE COST

**Do you measure it by what
you pay for the pot—or
by what you get from it?**

The foundry man who buys crucibles by the price mark will not pick DIXON'S—there are places where he can get more crucibles for the same money.

But the foundryman who judges the crucible by the amount of metal it will melt will sooner or later become a DIXON customer—there are no crucibles made that will average more “heats” for the money invested.

If you believe that you are saving money on another crucible, put it to this test. Try it for six months alongside of the DIXON crucibles in your foundry and keep a careful record of your heats. More foundry men are learning every year that this is the way to settle the crucible question.

**Joseph Dixon
Crucible Company**
JERSEY CITY, N. J.



GRAPHITE

VOL. XIV.

DECEMBER, 1912.

No. 12.

Issued in the interest of Dixon's Graphite Productions, and for the purpose of establishing a better understanding in regard to the different forms of Graphite and their respective uses.

THE EFFICIENCY OF A BIG BUSINESS

The *Commercial Appeal* of Memphis, editorially commenting on the report made by the men who investigated Brandeis' statement on the "Inefficiency of Big Business," intimates that today employes do not take that personal interest and pride in the concerns employing them that they did years ago, and that there is also no longer much personal interest in the employe manifested by the employer. The employe himself is no longer inspired by a feeling of personal affection for or loyalty to his employer. He has come to regard himself as a mere cog in a great machine.

It seems to be the business of a president of a large concern to earn dividends. It is the dividends rather than

the future of the concern that has his chief interest. It is the business of the superintendents and foremen to turn out the greatest possible amount of goods or to have their departments make a good showing.

The purchasing agent of a large concern seems to feel that his salary, which is his chief interest, depends upon his ability to buy any class of goods that will probably pass. He does not consider quality, but sees only what is to him an apparent saving to his company and the reason why his salary should be increased.

With the railroad companies all of this lack of interest has led to disastrous results, and possibly what is true of railroads, may be equally true of many other companies.

We are glad, however, to say that with many corporations that we know of there is no such condition as is referred to by Mr. Brandeis. We know that in our city, Colgate & Company and some other companies take a special interest in the welfare of their employes and this is not done from an entirely selfish position.

In the Joseph Dixon Crucible Company there is a get-together feeling all through the offices of the company, the superintendents and foremen and the older employes of the company. The president takes a personal interest in the welfare of every employe and is solicitous when an employe is ill or has suffered any accident.

Sometime ago the readers of GRAPHITE will recall mention was made of what had been done by the Dixon Company for

an employe who had been with the Dixon Company fifty years. Every employe of the Dixon Company knows that if he takes an interest in the company, the best possible care is taken of him, both for the present and the future.

"FORTY YEARS AGO"

Forty years ago last month the Joseph Dixon Crucible Company placed its first lead pencils on the market. They were Dixon's American Graphite, round shape, black finish, SM and M, Nos. 106 and 107, and Dixon's American Graphite, hexagon shape, maroon finish, SM and M, Nos. 116 and 117.

That they received honor in their own country is evidenced by the fact that the first shipment was made to Voorhees Brothers, Morristown, New Jersey.

The Dixon Company was advised by the leading stationers in New York and other cities not to attempt the marketing of a new brand of lead pencils, as there were two American companies manufacturing lead pencils and the German manufacturers were supplying the high grade pencils. The Dixon Company was further advised that if they were not content to confine themselves to stove polish and crucibles, they should content themselves with the making of a cheap grade of pencils and, like some other American manufacturers, give them a foreign name and a foreign label, as Americans preferred foreign brands.

Contrary to all this advice the Dixon Company made the finest pencils possible to make and gave them a good American name and brand and advertised them from coast to coast and from lakes to gulf.

The result is that the name Dixon is synonymous with a high grade pencil and the Dixon pencil factory has had addition after addition put on until now we are puzzled where to find room for another addition.

If you are expecting a moral we won't dissappoint you; make the finest goods and advertise.

WHEN LIFE'S A BURDEN

The following interesting letter comes to us in regard to Dixon's Graphite Axle Grease.

"Please advise us where we can get some of your graphite axle grease. We have been out for some time and the people are making life a burden to us."

When Dixon's Graphite Axle Grease is used as instructed, there is no axle grease on the market that can compare with it in efficiency and low cost. We have known cases where the Dixon Grease would outlast four greasings with the ordinary axle grease, both wagons doing the same kind of work.

ESTABLISHED 1827



INCORPORATED 1868



JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J., U. S. A.

Miners, Importers and Manufacturers of Graphite,
Plumbago, Black Lead.

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BALTIMORE OFFICE, 1005 Union Trust Building.

BUFFALO OFFICE, 72 Erie County Savings Bank Building.

ATLANTA OFFICE, Fourth National Bank Building.

EUROPEAN AGENTS,

Graphite Products, Ltd., 218-220 Queen's Road, Battersea, London.

WITH this issue, GRAPHITE begins its fifteenth year of existence. Its editor has watched many other house organs come and go and occasionally he has wondered if GRAPHITE is welcomed and, if so, by how many. A letter or even a post card, written perhaps hurriedly, will help us to raise the standard of GRAPHITE to that of the *DIXON PRODUCTS*. Will you not appoint yourself our contributing editor? And in the meantime we wish you all a very merry Christmas and a very, very Happy New Year!

OVERDUE ACCOUNTS

When a man's account has become considerably overdue, we never assume that the account has been intentionally neglected, and therefore we write a pleasant letter calling his

attention to the account, asking if it has not been overlooked, etc. The following is a very nice reply to one of such letters. As the writer goes into detail a little more than many others have done, although on the same line, we publish it, thinking it will be of general interest:

"The writer has before him your recent letter relative to the overdue account.

There is only one reason why this has not been paid. The reason is mismanagement. The writer has been outside the store all his time and only in long enough to sign the letters handed him

The most damaging result, however, was the neglect of taking care of our accounts payable, which has resulted in affecting the credit of this firm with your house.

No more managing a business by proxy for the writer. He is now planted in the store where he belongs and where he is going to stay. Changes galore have been made—more to follow.

He is going to ask you to be a little patient with your bill. Give him a chance to get squared around. He knows it's old and that promises have been broken, but the boss himself is on the job all day long and he hopes you'll help him.

What do you say?"

ELSEWHERE in this number will be found an article entitled, "Why Graphite is Used in Crucibles." This article was prepared by Mr. Malcolm McNaughton, one of the superintendents of the Dixon Company, who has for many years been connected with the Dixon Company and who has in this article endeavored to make plain the question that has been asked the Dixon Company by many users of crucibles and others.

Mr. McNaughton, through his college training and long years of special study of graphite, may be considered as one entitled to be looked upon as an authority.

THE POWER OF THE MIND

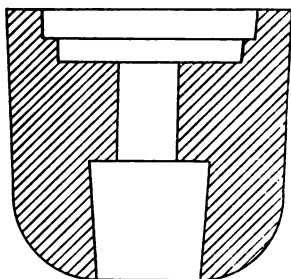
Some people give up all mental effort as soon as they get sick or afflicted, but there are some minds that no pain or suffering can subdue. The most powerful warship afloat, which was launched in the Thames in England last February, was built by a man who can neither sit nor walk. The most famous of our racing yacht designers is blind, but he could build a boat that was good enough to defend the America Cup year after year.

The head of the Thames Iron Works Company that built the Thunderer is a victim of chronic rheumatism and passes his days lying on a trundle bed upon which he is wheeled all over the immense works and oversees everything that is going forward. He knows every foreman in the shops and has the designs of every piece of machinery by heart, and they point to him as a wonderful example of the truth of the old adage, "The eye of a master can do more work than a thousand hands."—*New York Times*.

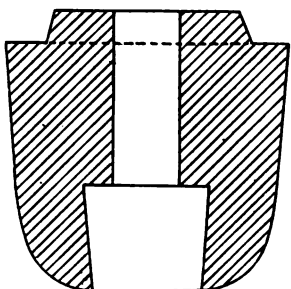
WE ARE told that one of the latest fads is to stamp cakes of butter "Votes for Women." The suffragettes are bound to make somebody swallow it.

STOPPERS AND NOZZLES

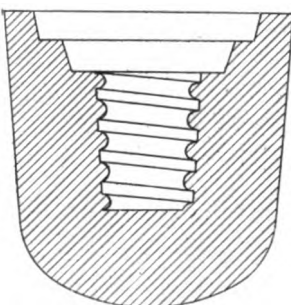
The following illustrations exhibit the five standard types of stoppers manufactured by the Joseph Dixon Crucible Company. During our many years of stopper experience, these five types have proven the most popular, satisfactory and serviceable.



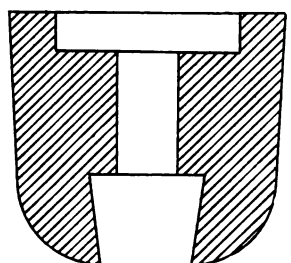
We make upward of one hundred and fifty styles and sizes, but many of them are almost identical—the difference being in the size of the bolt-hole and sleeve connections, or the radius. Others vary in size and weight, but have the same general style as shown in the cuts.



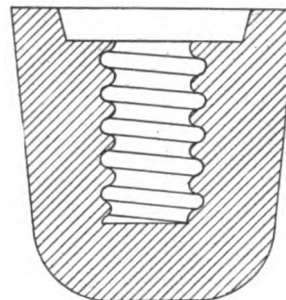
Hundreds of freaks have come and gone, but these five illustrations represent the survivors, so to speak, and give an assortment which meets practically all requirements. If anything different in style is required, we shall be glad to have you furnish us with a sketch or blueprint.



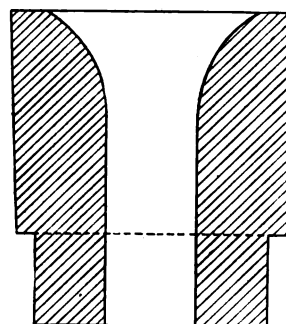
Our aim has been to produce the best possible stoppers we are able to make—without regard to expense. So much depends on the safe flow of the metal after it has been melted, that it is hardly worth while to argue over the difference of a cent or two in the price of this important tool.



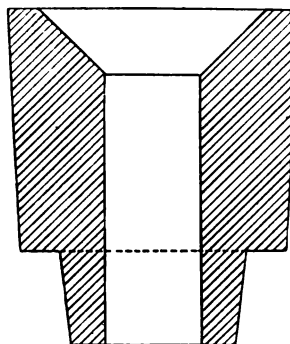
One of the features of our product is that the grain runs lengthwise, and this can be proven by hammering one of our stopper heads on a stone—when it will be found to split from top to bottom—never crosswise. The advantage of this is that should the stopper head freeze to the nozzle the end of it would



not be so liable to come off in pulling it loose, as if the grain ran crosswise. Then, again, our stopper heads are true. The bolt-hole is always in the centre, and straight up and down—never on the slant. The contour of the bottom of our stoppers is true, also. They are, in fact, as true as if they were turned up on a lathe.



In addition to stoppers, we also show two of the principal styles of our graphite nozzles. These are becoming more popular every day and although the price is considerably higher than clay nozzles, we believe that a trial will convince the most sceptical that they are worth the difference.



If you are interested in stoppers or nozzles, write us—care of the *CRUCIBLE DEPARTMENT*, for further information, price, etc.

IT SHOULD be of much interest to owners of automobiles to know that a well known racing man claims that he can get one mile more per gallon of gasoline when his car is lubricated with Dixon's Graphite Automobile Lubricants. Time is of the greatest possible value to a racing man. Every moment saved means miles of distance.

DEPENDS UPON THE GRAPHITE

On page 770 of the August, 1912, issue of the *Locomotive Engineers' Journal*, the statement was made that the continued use of graphite on engine valves and seats is not advisable, because of its tendency to clog the valve strips and the nozzle by forming into lumps.

Our reply follows: This is true when the wrong grade of graphite is used or when it is not used in proper quantities, but when flake graphite of the Ticonderoga variety is used in the correct proportion, great benefit is derived. We have many letters in our files from engineers telling us of the increased load they can pull when they use Dixon's Flake Graphite, and how much easier the reversing lever works.

The microscope shows all metal surfaces to be irregular. It is the scraping of the minute projections over one another that causes worn and scored parts. The thin flakes of graphite become attached to the irregular spots and there is built up over the whole bearing surface a thin, tough veneer, thereby preventing metal-to-metal contact, and substituting instead the low frictional contact of graphite-to-graphite. After the graphite veneer is formed the parts may be run for a long time in the absence of any lubricant without cutting. This unique service rendered by flake graphite is invaluable, especially in the case of locomotive cylinders and valves, because it protects the friction surfaces during the time required to deliver a new supply of oil from the cab. Even should the oil supply fail for a considerable time, no harm would result to parts that had received a coating of flake graphite. Statistics show that when the Dixon Flake Graphite is used regularly with oil, the up-keep cost is greatly lowered and better service is maintained.

Graphite should not be used through hydrostatic lubricators because it is heavier than oil (if the graphite did not settle readily from the oil it could not get to the metal surfaces) and might choke up the small oil passages. No injury has ever followed the judicious use of flake graphite. Only a relatively small amount of flake graphite is required to give the desired service and it will not clog unless fed in such large quantities that it cannot possibly find proper lodgment upon the surfaces to be lubricated.

The *Journal's* statement seems to have aroused others, both readers of that publication and friends of the Dixon Company. In the November issue of the *Journal* appeared the following letter from Mr. Thos. W. Field, Div. 408:

MIDDLEPORT, O., Sept. 26, 1912.

EDITOR *Journal*: On page 770, August *Journal*, it is stated graphite will clog strips in valves, nozzle and exhaust ways.

I have used graphite regularly on passenger engine making about 4,500 miles per month on an average for the last eight years. I use about one pound to the 1,000 mile run. I have never had a clogged valve strip. Nozzle is not cleaned oftener than other engines in the same service, and I have looked at exhaust ways every time engine has been overhauled and can find no trace of any of them being clogged. This engine's valves would not run thirty days without facing before I began the use of graphite. She has been running now nineteen months without being refaced or bothering strips, although the castings are very soft. Graphite shows on pistons and

valve stems all the time. It has saved my back many hard jerks from reverse lever. I cannot praise it too highly.

THOS. W. FIELD, Div. 408.

In addition to the experience of Mr. Field we have received the following communication from an enthusiastic Texan who makes known his opinion of the *Journal's* critic in plain language. Mr. Teas, who states that he has used flake graphite for over eighteen years, is certainly entitled to have his opinion regarded as having been founded upon experience:

EL PASO, TEXAS, Nov. 21, 1912.

Joseph Dixon Crucible Company.

DEAR SIR:—I have read with great interest the criticism on the use of graphite and your answer to the same in the August and October numbers of the *Locomotive Engineers' Journal*.

Having used your flake graphite for more than eighteen years, I feel that it is one of the best friends an engineer has, with small allowance of oil, high steam pressure, bad water and heavy slide valves. I use it as needed through the relief valves, two tablespoons of graphite to three pints of oil and instead of having any bad results, find that the valves and seats are smooth and polished, the engine smart and quick, doing her work easily, no wear on the valve gear as valves are always well lubricated and cause no jerk or strain and can make the mileage expected on the oil allowance. Really I could not say enough for it, could not and would not be without it and buy it regularly in preference to using the cheaper quality which the company furnishes.

Occasionally, on a long drift, when cylinders are cold, I introduce a small amount of kerosene into the relief valves to remove any particles of it which might lodge between the cylinder packing rings and piston.

I made 125,000 miles with my last engine and I attribute it largely to the constant use of Dixon's Flake Graphite. I am convinced that your critic has either never used your graphite or has used it without judgment. I beg to remain,

Yours truly,

(Signed) ALBERT TEAS,

218 Walnut Street, EL PASO, TEXAS.

AUTOMOBILE HEARSE EXCEEDS THE SPEED LIMIT; DRIVER LAYS IT TO DIXON'S GRAPHITE

In a nearby city the driver of an automobile hearse was arrested for exceeding the speed limit. When hauled before court the driver did not think it possible for his automobile to exceed the limit; in fact he said it was so built that it could not exceed fifteen miles per hour and he did not think he was going over twelve miles an hour. As there was sufficient evidence to convict him he was fined \$10.00 in costs and went away with the remark that if he had not lubricated everything up with that Dixon's Graphite, he probably would not have been arrested.

ACCOMPANYING an order from a wholesale stationer we receive the following praise:

"We find your Anglo-Saxon a fine selling pencil and every one speaks highly of it."

WHY GRAPHITE IS USED IN CRUCIBLES

By MALCOLM MCNAUGHTON

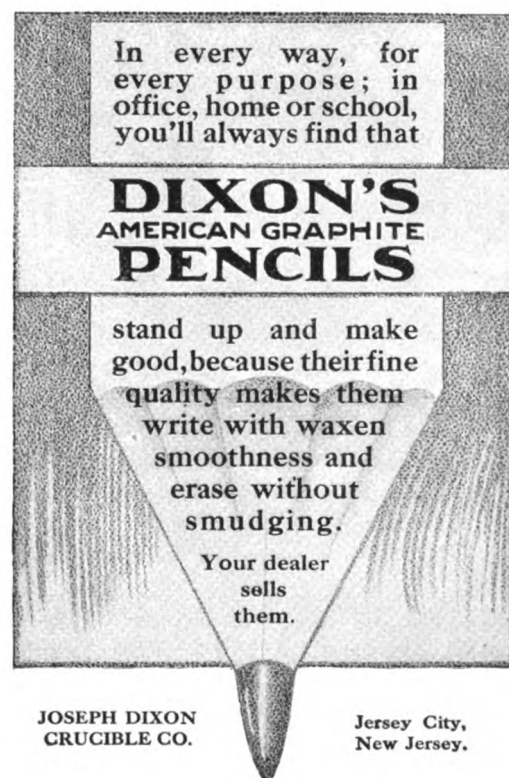
Graphite of the kind used in the manufacture of crucibles, is a natural crystalline form of carbon. It is infusible at all temperatures, but volatile above 4500 degrees F. It has a low coefficient of heat expansion as compared with that of the other ingredients which make up the composition of the crucible. It is slowly oxidized, that is, consumed in the presence of air or oxygen at temperatures above 1000 degrees F. The rate of combustion is quite slow between this temperature and 1700 degrees, at which point the rate of combustion appears to increase quite rapidly. It is a good conductor of heat as compared with clay and other earthy materials contained in the crucible, so that a crucible containing 50% of graphitic carbon will conduct heat much more rapidly than a crucible containing no graphite whatever. These four properties, that is, infusibility, low coefficient of heat expansion, comparatively high conductivity and slow rate of combustibility, are all functions of its use in crucibles. It is not easy to place these in the order of their importance, because in different kinds of service this order would probably change. It will therefore be best to discuss each of these properties by itself.

(1) **INFUSIBILITY.**—As most of the processes to which the plumbago crucible is subjected are carried on at temperatures below 3000 degrees F., the question of volatilization is not to be considered. At all temperatures graphite is infusible. As there is no difficulty whatever in making mixtures of fire-clay with other refractory materials which will stand temperatures up to 2700 degrees, the function of graphite in this particular, only applies to temperatures above this point. If we take a piece of crucible material and cover it with fine graphite so as to keep the air away, and subject it to a temperature even as high as 3300 degrees, we will not find any mass fusion. But if we remove the graphite by combustion, and then subject it to the same temperature, the mass melts readily. The action of the graphite in this instance is probably in the way of preventing the flowing of any particles which have started to melt over adjacent unmelted particles, and in this way no general fluxing occurs. This property is well illustrated in the case of crucibles used for melting steel in gas fires. After each heat the outside of the crucible is covered with a vitreous glaze, and immediately underneath lies the crucible wall in its original condition. The line of demarcation is absolutely sharp. The crucible when placed in the fire, passes through a temperature from 1000 degrees up to about 2700 degrees, during which time the graphite is being slowly burned from the outer surface of the crucible wall. As soon as the temperature reaches the melting point of this graphite-free material, it melts quickly, but without disturbing that portion of the wall where the graphite remains.

(2) **LOW COEFFICIENT OF HEAT EXPANSION.**—If it were possible to produce a material which would not expand on heating and at the same time possess sufficient strength to withstand the necessarily severe use, crucibles made of such a material would be able to stand successive heatings and coolings indefinitely, without cracking. Anything which tends to reduce the coefficient of expansion of the crucible wall, tends to reduce the liability of failure from this cause, but this particular point must not be considered by itself, but in connection with the third which is that of heat conductivity.

(3) **HIGH HEAT CONDUCTIVITY.**—Since we do not possess such an ideal material as is referred to in the last paragraph, it is important that the difference in temperature in different parts of the crucible be kept as small as possible. Graphite enables us to do this to a very great extent. Thus, an inch cube of graphite crucible material placed over an electric heater at constant temperature, will pass heat through sufficient to melt a tin pellet in three minutes. Another cube of similar size in which the particles of graphite are replaced by similar sized particles of fire-sand, requires eight minutes in which to bring about the same result. The outside of a crucible when in a furnace, may be subjected to a temperature of 2500 degrees, while the inside of the crucible in close proximity to unmelted metal may be 1000 degrees lower. The outside of course expands in proportion to its temperature, so does the inside. This difference in expansion sets up a strain which of course tends to rupture the crucible. Without the use of graphite these differences would be much greater, especially at the beginning of the melting operation, and the likelihood of cracking of the crucible would be very much increased.

(4) **SLOW RATE OF COMBUSTIBILITY.**—Many ask why a dense carbon, like retort carbon, could not be used in the manufacture of crucibles. It might of course, with a relative degree of success, but as we have shown that as soon as the graphite has been removed, the remaining portion of the crucible is more easily fusible. It is important that the graphite does not burn away too quickly, for if it should do so, the rate of wasting away, due to fluxing, is materially increased. Retort carbon or coke would be consumed much more rapidly than the graphite, and therefore the crucible would be very much less durable. Furthermore, carbon of this sort is not so dense as graphite, and would conduct the heat very much less readily, and so increase the tendency to crack.





TWO MORE NOTABLE BUILDINGS OF RICHMOND, VA.

Possibly without exception the rooms of the home-like Richmond Hotel at Richmond, Va., are the lightest and most airy of any hotel in the country. The recent ten story annex and two story addition to the Richmond Hotel, planned by John Kevan Peebles, Architect, Norfolk, Va., were erected by John T. Wilson Company, general contractors of Richmond, Va., at a cost of \$500,000. The steel fabricators were the Richmond Structural Steel Company, and the entire tonnage of steel is protected with three coats of Dixon's Silica-Graphite Paint.

At the extreme right of our illustration of the Richmond Hotel on this page, may be noted a small building upon which the words "Drummers Supplies" are painted. In front of this building across the street stands the new home, a substantial structure, of the Life Insurance Company of Virginia, an illustration of which appeared in the September issue of GRAPHITE.

Our other illustration occurring on page 3523 represents one of Richmond's latest skyscrapers, the Virginia Trust Company Building. This structure was planned by the well known New York architects, Clinton & Russell, and also erected by the John T. Wilson Company. The 700 tons of steel work contained in this structure were fabricated by the

Virginia Bridge and Iron Company and painted with Dixon's Silica-Graphite Paint.

The small structure in the foreground of this illustration, appearing next to the Virginia Trust Company's Building, is the old home of the First National Bank, whose modern up-to-date home was also illustrated in the September issue of GRAPHITE.

These buildings at Richmond are representative of the many large buildings erected throughout the country and from the fact that the architects, steel erectors, general contractors and others whose business must be to see that the proper building material, etc., is used, have specified and requested the use of Dixon's Silica-Graphite Paint, it is at once apparent that not only is the Dixon Paint a product of the highest grade, but its wide use is indicative of its having the confidence of these building experts. Use it wherever you have any metal surface to protect, for it saves the cost of frequent repainting, which in turn involves more or less unnecessary expense of labor and material.

HOMER, aged three, was explaining the use of a lead pencil to his little friend. "This," pointing to the sharpened lead, "is the end you write with, and this," pointing to the rubber eraser, "is what you write with when you don't like what you sayed (said)."



VIRGINIA TRUST COMPANY BUILDING

THE BACKBONE OF LUBRICATION

A correspondent tells us that it is backbone rather than brains that count. That some very brainy men have died in the poorhouse while other men with plenty of backbone and not so much brain have made a success of life and died rich. To start anything you must have brains, but to get there you must have backbone.

Then he goes on to tell us it is the same in lubrication—to start on a long and punishing trip your machine must have the proper oil and grease, but to get to the end of your journey

with the least worry and wear, you must have a supply of Dixon's Flake Graphite—it's the backbone of lubrication.

IT REQUIRES an awful amount of faith to relish a meal in a cheap restaurant. No one knows it better than he who has tried it. It is equally true that it requires an awful amount of faith to believe in a brand of goods that does not bear the label of an old established concern whose goods are considered standard.

WE HAVE HIS BUSINESS "FOR TIME AND ETERNITY." LET US HOPE SO

A few days ago we had a visit from a gentleman who had been actively connected with a graphite mining company during the period it was in operation. The concern was not able to make a success of the business and ceased operations after suffering considerable loss. This gentleman related a number of the experiences which he encountered in trying to market their goods, one of which is as follows: He visited a large rubber packing manufacturer and after having submitted his samples and prices, was told that they were satisfactory and that his own personality was so agreeable that they were willing to place a trial order with him. But he was informed that this was the fourth time that they had placed trial orders with concerns outside of their regular source of supply, and that in every previous case the results had been unsatisfactory. The material was either entirely different from the sample, or the order was not filled at all, and he was informed that if another failure resulted, that this particular company's business could never again be diverted from Dixon, who for years has supplied them with graphite of unvarying and satisfactory quality. The order was filled as well as a second order. A third order was received after the graphite mining company had ceased operations, and so of course, could not be filled. The representative of the graphite company congratulated us on the fact that now we had this rubber company's business for time and eternity.

WHEN computing the percentage of loss through the slipping of a belt, an allowance of 1.5 per cent should be made for creep. Subtracting this 1.5 per cent from the percentage of apparent slip will give the actual slip. Slip is not the main item, at the same time it is one of the little things which, if permitted to continue, contribute its share toward reducing profits.

Southern Engineer, September 1912.

The Dixon Belt Dressings are a sure cure for slipping belts. Their efficiency lies in their ability to restore and keep belting in its original pliable condition.

The Dixon Traction Belt Dressing, paste form, has for its base highest grade animal oils, which penetrate to the innermost fibres of the belt. We have here in our factory belts which have been in hard daily service for over twenty years and are in good condition today.

The Dixon Solid Belt Dressing is put up in cylindrical bars weighing about one pound, and for quick results in curing a slipping belt, it has no equal. Does not contain anything injurious to the belt.

Since the above was written, we have received the following letter from one of our customers.

"Please send us at once one ten-pound pail of your No. 665 Traction Belt Dressing and Leather Preservative. We find this to be one of the best belt dressings that we have used."

GRAPHITE FOR AIR BRAKE PARTS

Occasionally someone ventures the opinion that the idea of using dry graphite instead of oil or grease for lubricating triple valves is too new to warrant their risking a trial of it. The fact is that the value of dry graphite for this service was

known years ago. In looking through our scrap-book the other day, we noticed an advertisement that appeared as far back as June 1901 in one of the railway engineering papers, wherein we made mention of the use of dry graphite for various parts of the air brake system. In this connection, it is interesting to note the recommendation of the 18th Annual Convention of the Air Brake Association:

"The triple valve slide valve and its seat in the bushing should be lubricated with a high grade, very fine dry graphite which should be applied as follows: After all oil and grease have been thoroughly removed from the slide valve and its seat in the bush, the dry graphite should be rubbed into the face of the slide valve, its seat in the bushing and the upper surface of the bush where the slide valve spring bears, with a view of filling the pores of the metal with graphite. After the graphite has been thoroughly rubbed into the parts mentioned, a light coating of loose graphite should be placed on the seat and the slide valve placed in the bushing."

It is very pleasing to state that practically every railroad in the country is today using the Dixon Dry Air Brake Graphite as a standard, and air brake experts tell us that the dry graphite is more than meeting their expectations.

SILICA-GRAPHITE PAINT FOR ROOFS

We have received the following voluntary testimonial from the foreman painter of one of the largest railroads in America. As railroad officials of all kinds have a very strong dislike to publicly recommending anything of this kind, we omit the name and place.

"I have had Dixon's Silica-Graphite Paint on the roof of my house for the last fourteen years. It is the best protective coating that I know of. When asked about the most durable paint for roofs, I always advise the use of Dixon's and send people to our local dealer, Mr. Parsons, and have been the means of selling quite a little of your paint in that way.

"There would be but little of the mineral roof paints sold if people knew the value of Dixon's Silica-Graphite Paint."

While there are other graphite paints offered the public, there is only one silica-graphite paint that we recall, and that is Dixon's Silica-Graphite Paint. It might be quite possible to mix powdered silica with graphite and manufacture it into a paint and call it a silica-graphite paint, but it would be very unlike Dixon's Silica-Graphite Paint. The difference would be that with Dixon the silica and the flake graphite are largely united particle to particle, as the silica is associated with the graphite in the mine. In other words, the pigment is as Nature herself made it. It forms a paint pigment that is an ideal pigment for protective paints. The oil used is the best boiled linseed oil obtainable.

AT THE FACULTY TEA

She (sweetly as they sip their tea together)—"Isn't this delicious?"

He (absent-mindedly)—"Yes, I love to take tea with a little lemon."

DIXON's graphite publications sent free upon request.

CONCERNING THE USE OF GRAPHITE

Some Extracts from Articles, Reports, Inquiries, Etc., Appearing in Recent Issues of the Technical and Trade Publications

In the "Steam Car Department" of the *Automobile Dealer and Repairer*, owners, users and others are advised that "all screw connections exposed to considerable heat or to moisture are liable to become very difficult to undo if proper precautions are not taken. The unions on the generator of a steam car or the unions on the exhaust pipe of a gasoline car are good illustrations of this. The brake pins and nuts, the nuts on spring clips, etc., are also very likely to become rusted on. Whenever any such connection is removed a little pure graphite mixed with oil to a paste of the consistency of cream should be applied to the threads. The nut or union can then be unscrewed next time without difficulty, as, although the oil may be burned off, the graphite never leaves the metal, so the threads cannot seize nor oxidize and give trouble.

"Why makers do not adopt this system with new cars is not easily understood, as it costs practically nothing. Those who have struggled with nuts firmly rusted on somewhere underneath the car (such as an axle spring clip) will appreciate this point."

During the discussion of a committee report upon the development of turntables, at the recent Bridge and Building Association Convention, Mr. R. H. Reid (L. S. & M. S. R. R.) stated that he has used graphite grease as a lubricant and finds that even when the tables are overloaded and the grease is forced out the graphite remains.

At the same convention the committee upon the Painting of Structural Iron and Steel reported that graphite pigments have given the best satisfaction as outer surface and finishing paint.

"The hardening of prepared paints, stored in tins" is discussed by H. A. Gardner, in a paper printed in the *Journal of the Franklin Institute* for October. The experiments described showed that the alkaline pigments produced slight saponification of the linseed oil vehicle, while the inert pigments, such as graphite, did not cause any chemical action.

The author held that the use of linseed oil substitutes which contained large percentages of rosin, or the promiscuous use of acid rosin dryers had been the cause of hardening of many prepared paints in the container.

Mr. William E. Miller writes in the September 3 issue of *Power*, of his method of preventing carbon brushes from sparking. He adds: "Each morning after shutting down I take off the brushes and leave them in kerosene and graphite all day. This seems to make them softer."

In answer to the inquiry of a reader who writes that he is convinced of the merits of graphite as a lubricant, but who has experienced some trouble in feeding it to his engine, *Power Boating* says: "Our suggestion would be that you mix a portion of graphite with some oil and place it in the case. Do this at intervals and you will soon find that the graphite has worked onto the cylinder walls, where it supplies a sort of veneer, making an excellent bearing surface. One thing do not neglect; be sure that the graphite you use is prepared for this kind of service and not "any kind."

Writing in the October 8 issue of *Power* about the care and management of water tube boilers, Mr. C. K. Heasley says: "The mud drums and bottom nipples should be thoroughly

scraped each time the boiler is washed out and coated with some good non-rusting paint. A good paint for this purpose and one that can be relied upon is made by mixing a good quality of graphite with raw linseed oil to the consistency of thin paint and then either rub or paint on with a brush, going over all bottom nipples and the mud drum, also the rear end of all the bottom tubes which may draw dampness from the bottom All manhole plates should be grooved and treated with a solution of graphite and oil; also all handhole plates and caps, as this will prevent corrosion and the wasting away of the plates in case of leakage. If handhole plates leak and corrosion commences when a boiler is in operation, they should be treated with a thin solution of graphite and oil or kerosene oil."

After giving a method for removing sticking valve caps, the *Accessory and Garage Journal* adds a few words of precaution as follows: "Before replacing, the threads should be coated with a mixture of oil and graphite, as this will not only prevent rusting but will facilitate removal when desired."

Mr. Luke Marier, writing in *Power* of October 22, under the heading of "Common Troubles of Siphon Condensers," states how a condenser should be taken apart in order to be cleaned. He adds, "Extreme care, however, should be exercised in replacing the gaskets and making joints. Gaskets should be painted with graphited oil and then the bolts tightened cautiously."

In an interesting and complete article entitled, "Elevators, Their Types and Rules for their Care and Operation," written by J. J. Forbrich for *Building Management*, writes that "when putting in new cables, it is good practice to thoroughly saturate them with raw linseed oil, or a compound of one part graphite to five of cylinder oil. This will soak into the centre and amends in a measure for what was neglected in the manufacture."

The Typesetting Machine Engineers' Journal makes the following reply to a correspondent who asked about the best method for cleaning spacebands:

"As you have mentioned, there are many ways of cleaning spacebands and each has its followers. The main thing to be remembered, however, is that the bands are to be cleaned not only of all metal and dirt adhering to the slide and wedge, but sufficient graphite should be deposited along the wedge to insure its proper lubrication and freedom of movement.

"In cleaning the slide usually a hardwood board is used, one whose surface is level, which will aid in keeping the edge of the slide from getting rounded off and thus allowing the metal to enter between the matrix and the band. Graphite should be used freely (Dixon's No. 635, either oiled or dry, is probably the best) and the band rubbed sufficiently to insure its becoming thoroughly coated with the lubricant. This should be repeated at least once every eight hours without fail."

In an article, "Tests for Packing" by W. E. Saunders, in the September 1 issue of the *Practical Engineer*, the author writes: "There is one point of construction that is especially important and that is that the wedges must slide very freely on each other. This point can be clearly seen by compressing the packing between the thumb and forefinger. When taken apart flake graphite should be seen on the sliding surface. The flakes slide easily on each other and aid in making a plane

surface of the rough edges of the duck. Amorphous or powdered graphite will not do, and the flake graphite should be in profuse abundance."

Eugene E. Hibert in the September 15 issue of the *Practical Engineer* asks for information concerning the lubrication of his air compressor. He states that the use of oil is prohibited on account of the use to which the air is put. J. Case in the October 15 issue of the same *Journal* asks, "Is he sure that he did not use too much oil?" An air compressor, especially a vertical type, will run with very little oil, and possibly a very little air compressor oil in which a little flake graphite is mixed will lubricate the cylinder without any being carried over with the air.

In the October issue of the *Practical Engineer* it says that, "One engineer who uses graphite constantly, states that for the first thirty days he used to mix one pound of graphite with a pail of water for each 100 boiler horsepower and pumped it into the boiler each night. After the first thirty days, he pumped in the same quantity once or twice a week, and found that it made the scale easy to remove. Another practice is to throw in about a gallon or, say, five or six pounds of graphite after cleaning the boiler and use no further treatment until the boilers are next cleaned, when the scale that has formed is found to be soft and easily broken up and cleaned out."

The Automobile, August 29, has the following to say under the subject, "The Proper Way to Store a Car": "In the storing of the tires for the winter great care must be taken or they will show a marked amount of deterioration at the beginning of the following season. Wash the casings thoroughly with soap and water after jacking up all four wheels. When every sign of dirt, oil and grease is removed take the tires off and remove the tubes from the shoes. Next paint the inside of the shoe with graphite which may be secured from any of the graphite concerns especially for the purpose. The same directions apply to the outside of the inner tube which should also receive a generous coat of the graphite. The tubes and casings should then be wrapped securely in brown paper and afterwards in cloth. When this is done store them in a cool, dry place, where the temperature will remain about the same all winter. Thirty degrees F. is a very good temperature for rubber which is subject to deterioration when exposed to either heat or light." For this use Dixon's Motor Graphite will be found especially well adapted.

Under the subject, "Cause and Treatment of Hot Bearings," Mr. J. R. Mitchell in the *Southern Engineer* says: "When a bearing heats, graphite mixed with oil will generally check the heating." The Dixon Company prepare three grades of lubricating graphite known as Flake Graphite No. 1, No. 2 and No. 635. Each is particularly well adapted for special classes of work.

We will be glad to furnish detailed information, upon request.

Mr. L. A. Leshner in *Power* for August, 1912, says: "When the packing is reassembled give the piston rod a coating of a mixture of cylinder oil and graphite before replacing it in the stuffing box." The Dixon's Flake Graphite No. 1 will usually be found best adapted for this work, because of the smoothness and toughness of the flakes and their ability to stay upon metal surfaces.

The New York Globe has the following to say concerning a formula for pipe connections and spark plugs.

Motoring Department, *The Globe*—Kindly publish a formula for a cement for pipe connections and spark plugs that will withstand heat and compression and will dry without heating.—M. G. F.

Ordinary brown shellac and graphite is good. Mix to a paste and apply when connection is made.

In this connection, the Dixon Graphite Pipe Joint Compound has been found to be very well adapted indeed. For convenient use, we market this in four ounce collapsible tubes, trade number 628.

SILICA-GRAPHITE PAINT ON METAL ROOF

We are pleased to reproduce the following testimonial which covers several of Dixon's well known graphite products.

ST. CLAIRSVILLE, OHIO, Sept. 10, 1912.

Joseph Dixon Crucible Company,

Jersey City, N. J.

GENTLEMEN:—Since 1871 we have been selling Dixon's Graphite Products, such as pencils, crayons, etc.

Regarding your paint. There is no better paint on the market for metal roofs and out-door exposure than Dixon's Silica-Graphite Paint. My house has had only three coats of Dixon's Paint in the last twenty-five years and the surface is in good shape.

(Signed) J. B. HOGG.

This testimonial proves our claim that Dixon's Silica-Graphite Paint for all metal surfaces will give longer service than competing paints, and is therefore more economical because it saves the cost of labor and material in frequent repainting.

If any of our readers are considering maintenance painting, we shall be glad to write them on the subject.

Your Car Needs It

Statistics prove that imperfect lubrication causes more than half the motor car troubles. Most of these are cured by the use of Flake Graphite, which produces on bearing surfaces a thin, tough veneer that permanently prevents contact of the metal surfaces—reduces friction and does away with cutting and heating of bearings.

DIXON'S Motor Graphite

(Pulverized Flake)

Mix it with your own choice of lubricants or we will do it for you, as we manufacture a full line of greases containing Dixon's Motor Graphite.

Ask your dealer for Dixon's Graphite Lubricant No. 677—a highest quality mineral grease scientifically combined with Dixon's Motor Graphite. Fine for differentials and transmissions. More economical than plain oil or grease.

Send name and model of car for free book, "Lubricating the Motor."

**Joseph Dixon
Crucible Co.**
Established in 1827
Jersey City, New Jersey





A CARNIVAL IN PENCILDOM

The weather for the occasion promised to be ideal in spite of the fact that Dixon's Tornado, who had been left behind guarded by Dixon's Dependable Assortment, threatened to break loose and create havoc. It was generally admitted, however, that the presence of Dixon's Talisman prevented any such unfavorable demonstration.

It seemed, as Dixon's Cosmos said, that all the world was there. From the gay white way came Dixon's Manhattan and Dixon's Metropolitan. Dixon's Penn-syl-va-nia came and explained that as usual Dixon's Quaker City was so slow that he was obliged to come alone. Dixon's Oregon Fir came all the way from that far off state while from abroad came Dixon's Anglo-Saxon and Dixon's Emerald.

Dixon's Pilgrim came afoot, as did also Dixon's Traveler. Only one stop was made by those who came in Dixon's Motor Car Assortments and that was when a Dixon's Car Inspector insisted upon boarding the cars and counting the occupants. The more daring came in Dixon's Aeroplane Assortments.

Dixon's Carpenter Assortments were found busily engaged at work upon the floats, assisted by several Dixon's Mechanics'. The floats were built with Dixon's Lumber Pencils—in eleven colors—and presented a handsome appearance. The finishing touches to the floats were added by Dixon's Artists'.

The children enjoyed themselves immensely. The little tots, Dixon's Beginners', played with Dixon's Store Assortment and rolled Dixon's Disc Erasers about. The older boys, Dixon's High School, played a game of ball with Dixon's Baseball Assortment.

Dixon's Five Hundred insisted upon a game of cards while Dixon's Dominos refused to leave their absorbing game. A dispute about their respective height arose between Dixon's Tip-Top, Dixon's Summit and Dixon's Pinnacle, which threatened to spoil the pleasure of the entire company.

The attention of the disputants was, however, diverted to the Marathon race between Dixon's Eterno and Dixon's Endurance which, owing to the slightly softer condition of the former, was won handily by Dixon's Endurance. After the race a bevy of Dixon's Stenographers who had left their Dixon's Note Books and Dixon's Tablets behind them, wandered into a grove where a number of Dixon's Students captured them.

Programs were served by Dixon's Program Pencils. All were warned to beware of Dixon's Pocket Pencils. Music was furnished by Dixon's Organ Assortment and a song rendered by Dixon's My Maryland.

The appearance of the King, Dixon's Monarch, was the signal for a wild demonstration which was increased immediately afterwards by the appearance of the Queen, Dixon's Dainty. The Queen was dressed in a beautiful red hobble skirt, trimmed with gold lettering and wore a hat of pink and gold. She at once became the envy and admiration of every belle and beau present and Dixon's Yellow Asters were spread about for her to walk upon.

The beautiful Dixon's Aurora appeared leaning upon the arm of Dixon's Ambassador, which brought forth another enthusiastic demonstration. Dixon's Uncle Sam was cheered vociferously as he marched at the head of an army of Dixon's Continentals.

Dixon's Carnival Assortment followed with clusters and ropes of Dixon's Gems and in costumes designed by Dixon's Tailors' with Dixon's Cloth.

Dixon's Oriole warbled so prettily that the King exclaimed: "She's a bird," and would have taken her in his arms but for the watchful eye of the Queen.

A float of Dixon's Golden Gate Pencils created ripples of approval and Dixon's Veritas dressed as Diogenes, with a tub made by Dixon's Artisan Pencils, started waves of mirth and confetti. Dixon's Century appeared as Father Time and Dixon's Sequoia in a fantastic Indian dance, flourished a tomahawk and uttered terrific warwhoops.

As night approached Dixon's Searchlight turned its powerful color about the gay and festive scene. Many were delighted with the wonderful antics of Dixon's Meteor. Dixon's Election Pencils and Dixon's Cabinets aided in the voting for the most beautiful girl present and all were pleased when that honor fell upon the blushing Dixon's Ruby. Pictures were in great demand and Dixon's Order Book was kept busy by Dixon's Sketching Crayon, who also employed Dixon's Framers.

EXPERIENCE

When a doctor stands on the street and sees one of his mistakes go by, he charges it, if he is wise, to his experience account and endeavors to avoid a like one in the future.

When an engineer finds a scored cylinder or a cut bearing he should also charge that to his experience account and endeavor to avoid any like occurrence. After all it is experience that counts in this world and possibly in the next as well. Science and theory come along and explain the why and wherefore, but it is experience that hits the nail on the head and drives it home.

Back of all that experience demonstrates is the reason why. We hear much of "the rule of thumb," but behind every "rule of thumb" is a reason why and the rule, if a good one, can be shown to have a sound theoretical foundation.

Every engineer who has intelligently made use of Dixon's Flake Graphite knows from experience that it will prevent cutting and scoring of bearings and will cure bearings and cylinders that have been cut and scored by insufficient lubrication.

Science and theory come along and explain the reason why, which is that the wonderfully thin and tough flakes, which have a mechanical affinity for metal surfaces, become attached to the microscopical irregularities and form a veneer of graphite which enables the oil or grease to accomplish what it could not without the aid of graphite.

Because it is the nature of most graphites to be smooth and unctuous it should not be assumed that all graphites are suitable for lubricating purposes. A graphite ground too fine instead of becoming attached to the bearing surfaces will be washed out by the worn and heated oil or grease.

The Joseph Dixon Crucible Company manufacture many kinds of graphite, but they are intended for different purposes. For the best results in lubrication, only Dixon's Ticonderoga Flake Graphite should be employed. It is prepared in different degrees of fineness according to requirements.

"ALL is not sold that glitters."—Footprints.

RE-SALE PRICES

From time to time we have been requested by the secretaries of associations to make re-sale prices on our goods, and in case dealers do not adhere to such prices, to refuse the filling of their orders.

It seems that many dealers are unfamiliar with the terms of the Anti-Trust Act and are, therefore, prone to make requests to manufacturers for assistance in the maintenance of prices which manufacturers are not legally privileged to render.

While a manufacturer of goods that are not patented is privileged to suggest to a customer the prices at which they shall be sold, he cannot insist that such prices shall be maintained; and while the manufacturer can decline of his own volition to sell any customer upon his books, he cannot, under the Sherman Anti-Trust Act, decline to sell him by reason of a request to that effect having been made by such customer's competitor or competitors. In the latter case the agreement not to sell such customer made in response to a request from another customer, would constitute a conspiracy in restraint of trade as construed by the Sherman Act and would not only subject a manufacturer to the penalty provided by the Act, but lay him open to a civil suit for recovery of damages by reason of the loss sustained by the customer who was deprived of goods with which to handle his trade.

The practice of the Dixon Company has always been to establish a consumer's price, a dealer's price and a jobber's price on most of its graphite products, and prices to the small trade and to the jobbers on its line of lead pencils. These prices the Dixon Company has always endeavored to maintain and has religiously frowned upon any price cutting as the Dixon Company does not believe in price cutting. The Dixon Company would gladly go further if the law permitted.

A CASE IN POINT

We are informed of a case where the main shaft became so heated that it threatened the stoppage of the machinery. A variety of lubricating oils and greases were used without avail. The shaft was so hot that it was impossible to bear the hand on it. Finally some graphited grease was used and the bearing promptly cooled. Was that engineer a "Misguided Soul?" He believed and he demonstrated his belief as soon as he got the graphite.

"Dixon's Graphite has three great virtues, anyone of which alone would entitle it to a place in the first rank of machinery supplies; namely, its value as a lubricant for all purposes; its value as a preventive of rust, and its value as a preventive of joints when separated," so writes an engineer for one of the big sugar plantations in the South. He adds further, "I never think of overhauling an engine or a pump without having a can of Dixon's Graphite by me. I use it with linseed oil for painting the shanks of bolts and clearance spaces of pumps, and the inside and outside of glands and I mix it with lubricating oil for packing, and on nuts and bolts, and even go so far as to coat the underside of nuts and their seats and I find it pays. Many times it has saved me time and money."

THERE IS courtesy even among cannibals. After killing and eating a couple of the native bay hunters, New Guinea Cannibals "kindly sent the bones back," says the explorer.

The Lubricant for Your Car

Flake Graphite is acknowledged an ideal lubricant because it produces on bearing surfaces a marvelously smooth and durable veneer that actually holds the metal surfaces apart. Friction is reduced to a minimum—bearing surfaces can't cut or seize—when you use Dixon's Motor Graphite, a wonderfully unctuous graphite of extraordinary softness and lubricating qualities.

Dixon's Motor Graphite increases the lubricating value of oils and greases. Only a very small quantity added regularly is necessary to keep bearings in perfect condition. Unlike oil or grease, it is unaffected by heat or cold—can't be squeezed out of bearings.



DIXON'S Motor Graphite (Pulverized Flake)



Add a little Dixon's Motor Graphite in dry form to the oil in your crank case or blow it in the spark plug hole. It will increase compression and give you more power from a smoother running engine.

Mix it with your own choice of lubricants or we will do it for you, as we manufacture a full line of greases containing Dixon's Motor Graphite.

Ask your dealer for Dixon's Graphite Lubricant No. 677—a highest quality mineral grease scientifically combined with Dixon's Motor Graphite. Fine for differentials or transmissions. More economical than plain oil or grease.

Send name and model of car for free book "Lubricating the Motor."

JOSEPH DIXON CRUCIBLE CO.

Established in 1827

JERSEY CITY, NEW JERSEY



UNIVERSITY OF ILLINOIS-URBANA



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